STUDIES ON THE FAUNA OF CURAÇAO AND OTHER CARIBBEAN ISLANDS: No. 198

ADDITIONAL NOTES ON CARIBBEAN TIGER-BEETLES OF THE GENERA CICINDELA AND MEGACEPHALA

by

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Another small collection of tiger-beetles which was made by the author during his visits to the Antilles may justify these additional notes to the papers of JONGE POERINK, on *Cicindela* (1953, this series vol. *4*) and the present author, on *Megacephala* (1955, vol. *6*).

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Megacephala carolina carolina forma *occidentalis*		102	107	Vd–e
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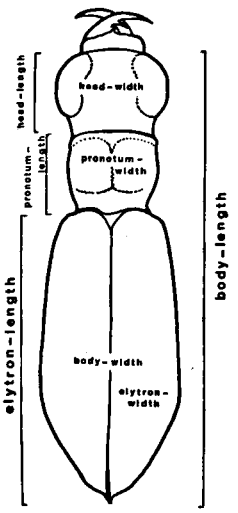

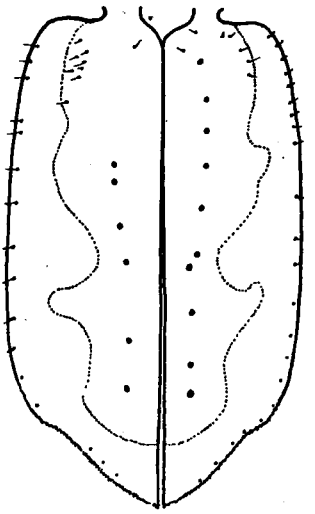

Fig. 26. Some body measurements taken in *Cicindela.*

Fig. 27. Elytrae of a female specimen of *Cicindela auraria* from Aruba, showing the position of a number of small erect setae in which may be distinguished: a) a single row of about 15–30 near the lateral margin, b) a scattered longitudinal row of (in principle) about 10 on the dorsal part, c) an irregularly scattered group of small setae, more or less bordering the proximal part of the dark area.

The author is indebted to Mrs. C. S. OLDENBURGER – EBBERS, Mrs. J. S. DE LEEUW VAN WEENEN – DE HART and Mr. F. VAN DER HEIDE for allowing him to include a number of measurements and other data, produced during their student's practical course in taxonomy at the Zoological Laboratory of the Utrecht University in 1967–1969. CARLA OLDENBURGER (cf. Table 2, Figs. 27–34) and JEANNETTE DE LEEUW VAN WEENEN (cf. Figs. 39–41) studied the greater part of the *Cicindela* material, while VAN DER HEIDE (cf. Table 5, Figs. 42–46) examined most of the *Megacephala* specimens.

Loans from the Science Museum of the Institute of Jamaica and from the British Museum (Natural History) are gratefully acknowledged. Several interesting specimens collected by Dr. Ir. R. H. COBBEN (Wageningen) and Dr. F. CHALUMEAU (Guadeloupe) have also been studied, while a few specimens from the Zoölogisch Museum of Amsterdam and the Rijksmuseum van Natuurlijke Historie at Leiden are included for comparison. Dr.

CHALUMEAU and MICHAEL A. IVIE (Columbus, Ohio) kindly informed me about their coleopterological activities. Furthermore I greatly enjoyed my contacts with Dr. THOMAS H. FARR (Kingston, Jamaica) and Mr. C. M. C. BROUERIUS VAN NIDEK (Voorburg, Netherlands).

A few illustration from the two preceding reports have been reproduced again (Figs. 14 and 20, Pls. I–II and V–VI) to make these additional notes a little more attractive to all those who share the author's admiration for these most engaging elements of the Antillean beetle fauna. I am indebted to the official artist of the Zoological Laboratory of Utrecht University, Mr H. VAN KOOTEN for the excecution of the photographs.

If not otherwise stated, all measurements have been taken from specimens preserved in alcohol.

The length of the elytron – considered to be a suitable measure for comparing relative sizes of body and legs – has been measured from shoulder to apex. The width of an elytron has been taken as being the half of the width of the abdomen; when measured separately its maximum width should be about 20% (♂)–25% (♀) more (cf. Fig. 26, and *Stud. 6* fig. 2). The body-length is defined by adding up the length of elytron, pronotum and head, though it is evident that a body-length without the protruding parts of abdomen and labrum, will often be quite different from the body sizes as given in literature.

Not much value ought to be attached to these measurements, which hardly can be taken in an exact way – they may, however, be of importance for mutual comparison.

All new localities indicated by station numbers have been described in these *Studies*, vol. *63* (1981).

The greater part of the material has been presented to the Zoölogisch Museum of Amsterdam, while other specimens have been deposited at the Rijksmuseum van Natuurlijke Historie, Leiden, the British Museum (N.H.), London, The Institute of Jamaica, Kingston, and the Institut de Recherches Entomologiques de la Caraïbe, Guadeloupe. It is to be regretted that in some cases the poor state of preservation reflects accidental collecting during trips which were not undertaken with the purpose of collecting insects.

Although the author admires the taxonomical work of RIVALIER (and other coleopterologists), his nomenclature intentionally was not used, as the present publication only aims at giving some additional information to two previous papers in which his certainly more satisfying classification was not used. The few data regarding the penis should be considered only as a stimulus to give more attention to the structure of the male copulatory organ when studying the modest though interesting cicindelid fauna of the Antilles.

Cicindela auraria Klug, 1834

[Pl. Ic; figs. 27–28, 35a–ç, 39a, 40a, 41]

JONGE POERINK 1953, p. 122–128, figs. 27, 28a–c, pls. 13–14 [Material from Margarita, Bonaire, Klein Bonaire, Curaçao, Aruba, Paraguaná and La Goajira, Venezuela, Colombia and Panamá; synonymy.]

Cicindela auraria, FERNÁNDEZ YÉPEZ & ROSALES 1956, p. 170 [Gran Roque.]
Dromochorus (Ellipsoptera) auraria, SCHILDER 1953, p. 560.
Habroscelimorpha auraria, RIVALIER 1954, p. 259.

ARUBA: *Spaans Lagoen*, muddy area, IV.1957, collected by R. H. Cobben (2♂♂ 2♀♀). Salinja Balashi near Spaans Lagoen, 22.X.1967 (1♀).
CURAÇAO: *St. Jorisbaai*, SE corner, mudflat, 23.X.1968 (4♂♂ 8♀♀); NE corner, blackish mud, 25.II.1970 (1♂ 6♀♀). *Salinja St. Marie*, mudflat, 20.II.1970 (1♀). *Salinja St. Martha*, mudflat near saltpond, 4.VIII.1967 (1♂ 1♀, 4 larvae from burrows). *Salinja St. Kruis*, N mudflat, 20.II.1970 (2♂♂ 1♀).
KLEIN BONAIRE: *Salinja Abau*, salty mudflat, 25.III.1955 (2♂♂ 1♀).
BONAIRE: *Lagoen*, NW part, hiding in cracks of salty mudflat, 2 & 9.III.1955 (3♂♂ 2♀♀); 7.XII.1963 (2♂♂ 1♀). *Salinja di Cai*, N, 9.IX.1967 (1♂). *Awa Lodo* di Lac, only a few specimens on a muddy limestone flat, 19.VIII.1967 (1♂). *Isla di Pedro*, Lac, dried limestone mud with crusts of blue algae, 7.III.1970 (2♂♂ 4♀♀). *Cas di Meeuchi*, Lac, soft whitish mudflat covered by felt-like algae, 9.III.1970 (1♀). *Witte Pan*, 5.III.1970 (1♀). *Blauwe Pan*, E, salty mudflat with flakes of tuffoid limestone, 9.III.1955 (1♀); N of crystallizers, disturbed saltflat, 14.III.1970 (2♀♀). *Salinja Martinus*, S of Kralendijk, muddy shore of saltpond, 1.IV.1955 (8♂♂ 6♀♀).
MARGARITA: *Punta de Piedras*, Estación de Investigaciones Marinas de Margarita, Sta. 801, white sandy beach of about 10 m broad, separated by a few low dunes from a muddy sandflat; a single specimen among many *C. graph. fulgidiceps*, 13.I.1964 (1♀); Sta. 802, sandy mudflat near mangroves, 9.I.1964 (5♂♂ 3♀♀).
COLOMBIA: *Santa Marta*, salt lake, 23.II.1896 (1♀, RMNH).

Body length ♂ 8.7–*9.4*–10.3 ♀ 9.2–*9.6*–10.6 mm; width ♂ *3.9* ♀ *4.1* mm; about 2.4 times as long as wide. (Measurements from 20♂♂ 20♀♀ from Aruba, Bonaire and Margarita, see Table 2).

Labrum yellowish white, with 6–9 submarginal setae. Frontal margin more (♀) or less (♂) outwards curved with a small but distinct central tooth (Figs. 28, 35).

Head glabrous, except for 2 supra-orbital hairs. Width across the eyes about 1.85 pronotum-width = 0.45 elytron-length. Genae densely clothed with decumbent bristles.

Pronotum about *1.5* mm in length, ♂ *2.2* ♀ *2.3* mm wide, about 1.5 times as broad as long. Median line distinct, transverse furrows rather deeply impressed. Lateral upperparts broadly but sparsely clothed with decumbent bristles.

Penis about 4 mm long, slender, almost 8 times as long as wide. Flagellum making a complete loop that encompasses well over 360° (Figs. 39a, 40a). Six chitinous plates counted.

Legs (cf. Tables 3 and 4) of ♂♂ only slightly longer than of ♀♀. I, II and III about 1.3, 1.6 and 2.0 times elytron-length, respectively, equalling

about 0.8, 1.0 and 1.25 body-length. Femur and tibia III about 0.7 and 0.6 elytron-length, resp. Trochanters I and II with a single long seta.

Elytron ♂ 5.0–*6.2*–6.7 ♀ 5.0–*6.3*–6.6 mm in length (cf. Table 2), about 3.2 times as long as wide. Lateral side weakly convex; the last 1/5 part rather abruptly turning off to the apex, rather distinctly curved inwards, its margin finely serrated, ending into a rather sharply projected spine. The yellowish-white marking consists of a wide uninterrupted marginal area which extends from shoulder to apex and is more or less tri-lobed within, the apical lunular part only reaching the medial margin. See also Fig. 27.

The labra of the Margarita specimens are uniform in having 6 submarginal setae; half of the Bonaire specimens possess the same number, while the others have 7–8 setae; one Aruba animal has 6 setae, the other four 7–9. It may be noted that the fourth joint of the antenna is about 0.9 times as long as the third one, as in other species.

Description of larva (according to Mrs. DE LEEUW – VAN WEENEN; fig. 41)

Dorsal side of head dark brown; ventral side of head and pronotum chestnut-brown. – Diameter of ocellus 2 subequal to the distance between ocelli 1 and 2. Fronto-clypeal-lateral area as long as broad. U-shaped ridge on caudal part of frons bearing 3 setae. – Antenna with the proximal and second segments subequal in length; the distal about two-fifth the length of the second. The proximal segment of the galea bearing 4 setae on its mesal margin. Ligula with 4 fine setae arranged in a transverse row. Proximal end of labial palpus with 4 setae; distal segment with 1 seta. – Pronotum with the cephalo-lateral margins extending as far cephalad as the mesal portion.

The larva of *C. auraria* may be included in the key given by HAMILTON (1925, p. 19) in the following way:

25. Proximal segment of the galea with four stout setae on the mesal margin; head and pronotum brown . . . . . a
    Proximal segment of the galea with three stout setae on the mesal margin; head and pronotum not brown, metalic colored 27
a. Diameter of ocellus 2 distinctly less than the distance between ocelli 1 and 2; median hooks 2 or 3 setae, inner hooks 4 setae 26
    Diameter of ocellus 2 subequal to the distance between ocelli 1 and 2; median hooks 1 stout seta, inner hooks 2 little setae . . . . . *auraria*

Cicindela trifasciata trifasciata Fabricius, 1781

[Pl. Id; figs. 29–30, 35d–e, 39b, 40b]

JONGE POERINK 1953, p. 129–132, figs. 28d–f, 29c–d, 30a–b, pls. 13 and 16 [Material from Margarita, Antigua, St. Barts, St. Martin, Anguilla, St. Croix, St. Thomas, Puerto Rico, Hispaniola, Jamaica, Gran Cayman, Little Cayman, Cuba and Cayenne; synonymy.]

Cicindela trifasciata, LENG & MUTCHLER 1914, p. 393; 1917, p. 194; BEATTY 1944, p. 132 [St. Croix]; WOLCOTT 1948, p. 227 [Puerto Rico]; MISKIMEN & BOND 1970, p. 78 [St. Croix]; BUTLIN 1976, p. 128 [Anegada]; IVIE 1983, p. 197–198, fig. 2a [St. Thomas, St. John, Tortola, Anegada, St. Croix.]

Dromochorus (Ellipsoptera) trifasciata, SCHILDER 1953, p. 560.

Cicindelidia trifasciata trifasciata, RIVALIER 1954, p. 258.

Cicindelidia trifasciata, BALAZUC & CHALUMEAU 1978, p. 20–22, fig. 2; BOYD 1982, p. 14.

Cicindela tortuosa Dej. var., DAHL 1892, p. 108 [Bermuda.]

TOBAGO: *Rockley Bay*, NE Red Point with *C. sut. hebraea* on dark sandy beach, 14.I.1955 (5 specimens, damaged).

GUADELOUPE: *Pointe des Châteaux*, 20.IV.1980, coll. F. Chalumeau (1 ♀); 26.VI.1982, F. Chalumeau (3 ♂♂ 6 ♀♀) [el. l. ♂ *6.9* ♀ *7.0* mm; tibia III ♂ *0.7* ♀ *0.65*, tars. ♂ *0.75* ♀ *0.7* el. l.].

ANTIGUA: *Deep Bay*, sandy mudflat near saltpond, 17.VII.1955 (2 ♂♂ 2 ♀♀). *St. John's Harbour*, the Cove, sandy beach, 1.VIII.1955 (5 ♂♂ 3 ♀♀). *Beach Hotel*, sandy beach, 11.VI.1965, coll. D. C. Geijskes (1 ♀, RMNH). *Dickinson Bay* near McKinnons Salt Pond, with *C. sut. suturalis* on greyish sand, 25.VII.1967 (5 ♂♂ 3 ♀♀).

BARBUDA: *Codrington Village*, at light, 5.VII.1955; 10.V.1982, F. Chalumeau (1 ♂ 1 ♀). *Low Pond*, Sta. 674, 5.VII.1955 (7 ♂♂ 3 ♀♀); 674a, 21.VII.1967 (8 ♂♂ 2 ♀♀). *Great Lagoon*, S of Codrington Village, sandy mud, 4.VII.1955 (6 ♂♂ 5 ♀♀); SE mud flat, 4.VII.1955 (2 ♀♀); SW shore, 23.VII.1967 (1 ♂ 3 ♀♀). *Palm Beach*, W of Codrington Village, with *C. sut. suturalis* on whitish sand, leeward of Lagoon (2 ♂♂ 2 ♀♀). *Billy Point*, near entrance of Great Lagoon, Sta. 832, with *C. sut. suturalis* on white sand beach, 22.VII.1967 (2 ♀♀). *Bull. Hole*, Sta. 667, low limestone flat near brackish water pond, 9.VII.1955 (1 ♂). Beach on *Barbuda*, 20.VI.1965, coll. D. C. Geijskes (6 ♂♂ 5 ♀♀, RMNH).

ST. KITTS: *Frigate Bay*, near Sta. 677, muddy sand flat, 20.VII.1955 (7 ♂♂ 12 ♀♀).

ST. MARTIN: *Atwell's Pond*, E of Philipsburg, sandy mudflat near saltpond, 2.VI.1955 (7 ♂♂ 15 ♀♀); 3.VI.1955 (4 ♂♂ 8 ♀♀); 26.IX.1963 (17 ♂♂ 12 ♀♀); 30.VII.1967 (4 ♂♂ 2 ♀♀). *Great Bay*, white sandy beach near Atwell's Pond, 1.IX.1963 (1 ♂); 26.IX.1963 (1 ♂). *Great Saltpond* NE, salty mudflat, 28.IX.1963 (11 ♂♂ 13 ♀♀). *Oyster Pond*, sand bar near sea with cow faeces, 13.X.1963 (2 ♀♀). *Saline de Grand' Case*, sandy mudflat near saltpond, 22.VI.1973 (3 ♂♂ 2 ♀♀). *Baie aux Cailles*, NE of Simson Lagoon, Sta. 830, 28.VII.1967 (2 ♂♂ 1 ♀). *Flamingo Pond*, part of Simson Lagoon, soft mudflat in drying lagoon, with 2 larvae hiding under pieces of wood, 16.X.1963 (2 ♂ 1 ♀). *Simson Bay flat*, part of drying Simson Lagoon, near Sta. 1130A, muddy sandflat, 6.VI.1955 (9 ♂♂ 5 ♀♀); 16.X.1963 (6 ♂♂ 5 ♀♀); 27.VII.1967 (1 ♂ 2 ♀♀). *Lowlands*, 21.IX. 1956, coll. R. H. Cobben (1 ♂ 4 ♀♀).

ANGUILLA: *Crocus Bay*, near Sta. 1704, sandy beach, 3.VII.1973 (2 ♂♂ 1 ♀). *Anguilla*, mudflat near school, 7.VII.1965, E.G.S.G. (1 ♀).
CAICOS ISLANDS: *South Caicos*, VI.1957, coll. T. H. Farr (6 ♂♂ 2 ♀♀, Sci. Mus. Jamaica).
TURKS ISLANDS: *Grand Turk*, Waterloo, 26.IV.1954, coll. C. B. Lewis (1 ♂); VI.1957, T. H. Farr (8 ♂♂ 5 ♀♀, Sci. Mus. Jamaica).
ANEGADA: *Setting Point*, beaches and saltponds, 9.VIII–21.IX.1975, R. K. Butlin (3 ♂♂ 4 ♀♀, Br. Mus.).
PUERTO RICO: *Playa Luquillo*, E of San Juan, Sta. 040, sandy beach with decay of *Syringodium*, 1.V.1973 (2 ♂♂ 1 ♀).
JAMAICA: Hope River bed, St. Andrew, near *August Town*, 11.XII.1955, coll. David Gregory (1 ♂). *Port Henderson*, St. Catherine, saline flats near sea, 21.I.1953, R. P. Bengry (1 ♂ 1 ♀). *Portland Ridge*, Clarendon, 1 mi E of Jackson Bay, 3.VIII.1953, C. B. Lewis (1 ♀). *Milk River* beach, 10.I.1954, G. R. Proctor (1 ♀). *Negril*, Westmoreland, 24.III.1955, T. H. Farr (1 ♀). *Falmouth*, Trelawney, 23.VIII.1955, T. H. Farr (2 ♂♂). All specimens in Sci. Mus. Kingston. – *Great Saltpond* near Port Henderson, sand bar near *Rhizophora*, 8.V.1973 (3 ♂♂ 3 ♀♀ with *C. carthagena*). Saltpan E of *Yallahs*, Sta. 1676), muddy shore, 6.V.1973 (1 ♀). *Mona* near Kingston, at Sta. 026, a few square metres of greyish sand along a freshwater reservoir, 16.VI.1973 (1 spec.).
LITTLE CAYMAN: *South Hole Sound*, near Sta. 1698, near *Rhizophora*, 5.VI.1973 (observed).
CAYMAN BRAC: *South Bay Lagoon*, near Sta. 1701, soft muddy area, 3.VI.1973 (observed).
SURINAME: *Matappica*, muddy sand near saltpan, 20.X.1940 (1 ♂). *Coronie* sand bar with shells near shore, 15.III.1945 (1 ♀). *Bigisanti*, at light in swamp near shore, 11.VII.1955 (1 ♂). *Paramaribo*, at light, 3.IX.1958 (1 ♂). *Coeroeni* island, at light, 10.VIII.1959 (1 ♂). *Paloemeu*, Swanilboto val, 2.IX.1959 (1 ♂). All specimens collected by D. C. Geijskes, RMNH Leiden.

Body length ♂ 9.7–*10.3*–11.0 ♀ 10.2–*10.5*–11.1 mm; width about ♂ *4.1* ♀ *4.3* mm; about 2.5 times as long as wide. (Measurements of 44 ♂♂ 43 ♀♀ from Antigua, Barbuda, St. Kitts, St. Martin, Turks & Caicos I. and Jamaica, cf. Table 2).

Labrum yellowish-brown, with 8–13 submarginal setae. Frontal margin outwards curved, with a distinct central triangular tooth (Figs. 29, 30).

Head, incl. genae, glabrous, except for 2 supra-orbital hairs. Width across the eyes about 1.8 pronotum-width = 0.62 elytron-length.

Pronotum about *1.9* mm in length ♂ *2.2* ♀ *2.3* mm wide, about 1.15 as broad as long. Median grove distinct, transverse furrows deeply impressed. Lateral upperparts sparsely clothed with decumbent bristles.

Penis about 3½ mm long, rather plump with a truncated apex, about 6 times as long as wide. Flagellum encompassing two complete loops (Figs. 39b, 40b). Six chitinous plates counted.

Legs (cf. Tables 3 and 4) of ♂♂ somewhat longer of ♀♀. I, II and III in

♂♂ about 1.45, 1.65 and 2.15 times elytron-length, resp., equalling about 0.9, 1.0 and 1.3 body-length. I, II and III in ♀♀ about 1.35, 1.45 and 2.0 times elytron-length, equalling about 0.8, 0.9 and 1.2 body-length. Femur and tibia III about 0.7 and 0.65 elytron-length. Trochanters I and II with a single long seta.

Elytron ♂ 5.8–*6.6*–7.6 ♀ 6.1–*6.7*–7.7 mm in length (cf. Table 2), about 3.2 times as long as wide. Lateral side weakly convex with a shallow inward curve just above the middle, the last 1/5 part turning off to the apex, which is rather pointed in the ♂, rounded in the ♀, ending in a short acute spine. The yellowish-white to brownish-yellow marking consists of: (1) a hoof-shaped humeral lunula from which the frontal part reaches the place at which the side of the pronotum meets the elytron, and the hind part ends in a more or less large spot; (2) a strongly S-shaped middle band which is crenated and sometimes interrupted in the middle; (3) a hooked apical lunula; all these components joined by (4) a more or less wide marginal area.

Cicindela trifasciata ascendens LeConte, 1851

[Pl. IIc]

JONGE POERINK 1953, p. 132–133, figs. 28g–h, 29e, pl. 15 [Material from Hispaniola, Cuba, Bermuda, México and U.S.A.; synonymy.]

Cicindela trifasciata tortuosa Dejean, BEATTY 1944, p. 132 [Taken on the sandy flats of Krause lagoon, Oct. 1937; det. J. M. Valentine.]

Cicindelidia trifasciata ascendens, RIVALIER 1954, p. 258.

Dromochorus (Ellipsoptera) trifasciata ascendens, SCHILDER 1953, p. 560

Cicindela suturalis suturalis Fabricius, 1798

[Pls. IIe, IVg–i; figs. 31, 36c–d, 40d]

Cicindela suturalis Fabricius (typical form), JONGE POERINK 1953, p. 133–135, figs. 28i–k, 29b, 30c–d, pls. 15–16 [Material from Antigua, St. Barts, St. Martin, St. Thomas and Hispaniola; synonymy.]

Cicindela suturalis, LENG & MUTCHLER 1914, p. 393; 1917, p. 194; BUTLIN 1976, p. 128 [Anegada]; IVIE 1983, p. 196–197, fig. 2c–e [St. Thomas, St. John, Anegada.]
Cicindela suturalis suturalis, MANDL 1958, p. 25, figs. 3–5.
Dromochorus (Ellipsoptera) suturalis, SCHILDER 1953, p. 560.
Cylindera (Plectographa) suturalis, RIVALIER 1954, p. 266; BALAZUC & CHALUMEAU 1978, p. 23–25, fig. 4 [St. Barts; "nous doutons fort de la présence ... en Guadeloupe. Nous n'avons pu ... nous procurer de matériel de la Martinique."]
Cylindera suturalis, BOYD 1982, p. 16.

ANTIGUA: *Deep Bay*, white sand near saltpond, cf. Sta. 1393, 17.VII.1955 (4 ♂♂ 6 ♀♀). *Fort Bay*, white sand beach, 18.VII.1955 (2 ♂♂ 2 ♀♀). *Dickinson Bay* N, white sand beach, 19.VII.1967 (9 ♂♂ 11 ♀♀); 25.VII.1967 (2 ♂♂ 2 ♀♀); near McKinnons Salt Pond, single specimen among *C. trif. trifasciata*, greyish sand, 25.VII.1967 (1 ♀). *Antigua*, A. D. Torlese (1 ♂ 3 ♀, Brit. Mus. 1932–148).
BARBUDA: *Martello Tower* beach, white sand, 8.VII.1955 (5 ♂♂ 4 ♀♀). *Palm Beach*, W of Codrington Village, white sand beach along bar bordering Great Lagoon, 12.VII.1955 (1 ♂ 3 ♀♀). *Billy Point*, Sta. 832, white sand beach near entrance of Great Lagoon, 22.VII.1967 (7 ♂♂ 3 ♀♀). *Coco Point*, SE part of Barbuda, Sta. 831, white sand beach, 23.VII.1967, 23.VII.1967 (2 ♂♂ 7 ♀♀).
ANEGADA: *Setting Point*, beach and saltponds, 9.VIII–21.IX.1975, R. K. Butlin (1 ♀, Brit. Mus.).
ST. THOMAS: *Magens Bay*, white sand beach, 20.VI.1955 (4 ♂♂ 6 ♀♀).

Body length ♂ 7.8–*7.9*–8.0 ♀ 8.1–*8.4*–8.7 mm; width about ♂ *3.15* ♀ *3.4* mm; about 2.5 times as long as wide. (Measurements from 13 ♂♂ 17 ♀♀ from Antigua, Barbuda and St. Thomas, cf. Table 2).

Labrum yellowish-brown, with 8–10 submarginal setae. Frontal margin weakly outwards curved (♀) or nearly straight (♂) with a small central tooth (Fig. 31).

Head, incl. genae, glabrous, except for 2 supra-orbital hairs and a row of decurrent bristles near the posterior margin. Width across the eyes about 1.3 pronotum-width = 0.43 elytron-length.

Pronotum ♂ *1.4* ♀ *1.5* mm in length ♂ *1.75* ♀ *1.9* mm wide, about 1.25 as broad as long. Median line and transverse furrows rather distinct. Lateral upperparts rather sparsely clothed with decumbent bristles.

Penis about 2½ mm long, rather plump, about 5½ times as long as wide. Flagellum making a single loop well over 360° (Fig. 39d). Five chitinous plates counted.

Legs (cf. Tables 3 and 4) of ♂♂ only very slightly longer than of ♀♀. I, II and III about 1.25, 1.5 and 2.0 times elytron-length, resp., equalling about 0.75, 0.9 and 1.2 body-length. Femur and tibia III about 0.65 elytron-length. Trochanters I with a single long seta.

Elytron ♂ 5.0–*5.2*–5.5 ♀ 5.0–*5.6*–6.5 mm length (cf. Table 2), about 3.3

times as long as wide. Lateral side weakly convex; the last 1/4 part turning off to the slightly truncated apex, its margin finely serrated, ending in a sharply projecting spine. The yellowish-white marking is dominating to such an extent that there is only left one elongate subtriangular sutural mark of about 2/3 elytron length, which arises from a trapezium-like base which is as wide as about 2/3 part of the width of the proximal part of the elytron. The top of this sutural mark is abruptly widened and often partly enclosed by a narrow, more or less irregular line. More rarely this black sutural mark shows further development (somewhat resembling subsp. *hebraea*; cf. Pl. Ia).

Cicindela suturalis hebraea Klug, 1834

[Pls. Ia, IVc–e; figs. 32a–c, 39d, 40e]

Cicindela suturalis var. *hebraea* Klug, JONGE POERINK 1953, p. 135–137, figs. 28l–n, pl. 13 [Material from Trinidad, Barbados, St. Vincent, Guadeloupe, Hispaniola, Colombia, Venezuela, Cayenne, Brasil and Perú; synonymy.]

Cicindela suturalis var. hebraea, LENG & MUTCHLER 1914, p. 393; 1917, p. 194; WOLCOTT 1948, p. 226.

Cicindela suturalis hebraea, MANDL 1958, p. 25, figs. 3–5 [St. Thomas, Hispaniola, Colombia, Guyana, Cayenne, Brasil.]

Dromochorus (*Ellipsoptera*) *hebraea*, SCHILDER 1953, p. 560.

Cylindera (*Plectographa*) *suturalis hebraea*, RIVALIER 1954, p. 266.

Cylindera (*Plectographa*) *suturalis* race *hebraea*, BALAZUC & CHALUMEAU 1978, p. 25, fig. 5 ["ne paraît pas représentée dans les Antilles françaises".]

Cylindera suturalis hebraea, BOYD 1982, p. 17 [Guadeloupe, R. Dominicana.]

CURAÇAO: *Emmastad*, at light, X.1956, coll. R. H. Cobben (1 ♀); golf links, 26.X.1956, Cobben (1 ♀). [The two specimens of this new island locality had partly been eaten by insects after arrival in Utrecht.]

TRINIDAD: *Los Gallos Point*, sandy beach with some debris, Sta. 790, 16.I.1964 (8 ♂♂ 11 ♀♀). *Cocos Beach* at Nariva Swamp bridge, rather white sand with some decay, Sta. 789, 17.I.1964 (1 ♂ 1 ♀). *Maracas Bay*, white sand beach, 29.IX.1956, R. H. Cobben (6 ♂♂).

TOBAGO: *Rockly Bay*, Scarborough, dark sand shore with rock debris and *Sargassum*, Sta. 583, 20.I.1955 (3 ♂♂ 1 ♀). *Red Point*, NE Tobago, dark sand with debris, 14.I.1955 (2 ♂♂ 3 ♀♀). *Tobago*, J. Smart (1 ♀, Br. Mus.).

ST. VINCENT: *St. Vincent*, H. H. Smith 231 (1 ♀, Br. Mus.).

MARTINIQUE: Ste Aure, Roguet, 8.X.1981, F. Chalumeau (Zoöl. Mus. Amsterdam) [el. l. 4.9 mm].

PUERTO RICO: *Playa Medianía Alta*, E of San Juan, Sta. 038, sandy shore near drainage from swampy region, 1.V.1973 (3 ♂♂ 1 ♀).

Body length ♂ 7.5–*7.8*–8.6 ♀ 7.7–*8.3*–8.8 mm; width about ♂ *2.9* ♀ *3.25* mm; about 2.6 times as long as wide. (Measurements from 17 ♂♂ 10 ♀♀ from Trinidad and Tobago; cf. Table 2).

Labrum yellowish-brown, with 8–10 submarginal satae. Frontal margin weakly outwards curved (♀) or nearly straight (♂) with a small central tooth (Figs. 32a–e).

Head, incl. genae, glabrous, except for 2 supra-orbital hairs and a row of decurrent bristles near the posterior margin. Width across the eyes about 1.3 pronotum-width = 0.43 elytron-length.

Pronotum ♂ *1.4* ♀ *1.5* mm in length, ♂ *1.7* ♀ *1.85* mm wide, about 1.2 as broad as long. Median line and transverse furrows distinct. Lateral upperparts rather sparsely clothed with decumbent bristles.

Penis about 2½ mm long, rather plump, about 5½ times as long as wide. Flagellum almost encompassing two loops (Figs. 39e, 40d). Seven chitinous plates counted.

Legs (cf. Tables 3 and 4) of ♂♂ only very slightly longer than of ♀♀. I, II and III about 1.25, 1.5 and 2.0 times elytron-length, resp., equalling about 0.75, 0.9 and 1.2 body-length. Femur and tibia III about 0.65 elytron-length. Trochanters I with a single long seta.

Elytron ♂ 0.48–*5.05*–5.5 ♀ 5.2–*5.55*–5.8 mm in length (cf. Table 2), about 3.4 times as long as wide. Lateral side weakly convex; the last 1/4 part turning off to the slightly more (♀) or less (♂) truncated apex, its margin finely serrated, ending in a small spine. The yellowish-white marking consists of: (1) a hoof-shaped humeral lunula, the hind part ending in a more or less triangular spot; (2) a strongly S-shaped middle band; (3) a hooked apical lunula; all these components are joined by (4) a more or less wide marginal band – a design which shows a striking similarity to that of *C. trifasciata trifasciata.*

F. CHALUMEAU (in press) considers *C. sut. hebraea* to be a continental form which does not occur on the islands from Grenada to Cuba. According to him the populations of the Greater Antilles (and those from Trinidad and Curaçao) need further investigation. Considering differences in elytral design and punctation mainly, he distinguishes four subspecies: the nominal form (from Anegada to Antigua), *C. sut. guadeloupensis* (Guadeloupe) and two new forms (Martinique, and Grenada + ? St. Vincent).

Cicindela suturalis guadeloupensis Fleutiaux & Sallé, 1889

[Pl. IId]

Cicindela suturalis var. *guadeloupensis* Fleutiaux & Sallé, JONGE POERINK 1953, p. 137–138, figs. 28o–q, pl. 15 [Material from Guadeloupe, Cayenne (?) and Brasil; synonymy.]
Cicindela suturalis var. *guadeloupensis*, LENG & MUTCHLER 1914, p. 194.
Cylindera (*Plectographa*) *suturalis* race *guadeloupensis*, BALAZUC & CHALUMEAU 1978, p. 25–26, fig. 6 [Guadeloupe.]
Cicindela suturalis nocturna Steinheil, 1875, MANDL 1958, p. 26, figs. 3–5 [STEINHEIL's description of *C. nocturna* from Colombia does not encourage an identification with *C. suturalis guadeloupensis*.]
Cylindera suturalis guadeloupensis, BOYD 1982, p. 17.

Cicindela graphiptera graphiptera Dejean, 1831

[Pl. IIa]

Cicindela graphiptera Dejean (typical form), JONGE POERINK 1953, p. 138–139, figs. 28r–t, pl. 15 [Material from Costa Rica and Colombia; synonymy.]
Dromochorus (*Ellipsoptera*) *graphiptera*, SCHILDER 1953, p. 561.
Opilidia graphiptera, RIVALIER 1954, p. 261.

Cicindela graphiptera fulgidiceps Putzeys, 1845

[Pl. Ib; figs. 32d–e, 36a–b, 39e, 40f]

Cicindela graphiptera var. *fulgidiceps*, JONGE POERINK 1953, p. 139–141, figs. 28u–w, 29f, pls. 13 and 17 [Material from Margarita, Tortuga, Venezuela mainland and Colombia; synonymy.]
Dromochorus (*Ellipsoptera*) *fulgidiceps*, SCHILDER 1953, p. 561.
Opilidia graphiptera fulgidiceps, RIVALIER 1954, p. 261.

MARGARITA: *Punta Mosquito*, Sta. 797, sandy beach with debris, 13.I.1964 (6♂♂ 4♀♀). *Punta Mangle*, Sta. 800, white sand beach, 10.I.1964 (1♂ 2♀♀). *Punta de Piedras*, near Sta. 802, white sand beach, 9.I.1964 (2♂♂); Sta. 801, 13.I.1964 (24♂♂ 32♀♀).

Body length ♂9.2–*9.8*–10.1 ♀9.7–*11.2*–11.7 mm; width ♂*3.7* ♀*4.2*, about 2.6 times as long as wide. (Measurements of 11♂ 13♀ from Margarita, cf. Table 2).

Labrum brownish yellow, with 6–8 submarginal setae. Frontal margin slightly outwards curved (♀) or almost straight (♂) with a small but distinct central tooth (Figs. 32d–e).

Head, incl. genae, glabrous, except for 2 supra-orbital hairs. Width across the eyes almost 1.2 pronotum-width = 0.4 elytron-length.

Pronotum about *1.6* mm in length, ♂ *2.3* ♀ *2.5* mm wide, about ♂ 1.45 ♀ 1.55 times as broad as long. Median line weak but distinct, transverse furrows deeply impressed. Each side broadly and rather densely clothed with decumbent bristles; central upper parts sparsely covered. Hindborder with a fringe of rather long bristles.

Penis about 2½ mm long, rather plump, about 5½ times as long as wide. Flagellum not yet completing a full loop (Figs. 39f, 40e).

Legs (cf. Tables 3 and 4) of conspicuous length, ♂♂ distinctly longer than ♀♀. I, II and III in ♂♂ about 1.2, 1.6 and 2.55 times elytron-length, resp., equalling about 0.75, 1.0 and 1.55 body-length. I, II and III in ♀♀ about 1.0, 1.3 and 2.05 times elytron-length, equalling about 0.65, 0.8 and 1.3 body-length. Femur III about ♂ 1.05 ♀ 0.9; tibia III ♂ 0.7 ♀ 0.6 elytron-length. Trochanters I and II without a long seta.

Elytron ♂ 6.1–*6.5*–6.7 ♀ 7.0–*7.7*–7.9 mm (cf. Table 2), about 3.6 times as long as wide. Lateral side very little convex or almost straight; the last 1/4 part turning off to the more (♀) or less (♂) truncated apex, its margin finely serrated, ending into a small spine. The yellowish-white marking is dominating to such an extent that from the dark parts there are only a few character-like figures left in which sometimes a design tending to that of the typical form (comparable with those of *C. suturalis hebraea* or *C. trifasciata*) can be recognized.

Cicindela boops Dejean, 1831

[Pl. IIb; figs. 33, 37a–c, 39c, 40c]

Cicindela Boops. Mannerheim DEJEAN, 1831, p. 258–260 ["Subcylindrica, supra viridi-cupreo-ænea; elytris punctatis, margine laterali subinterrupto antice intus dentato, fascia media subtransversa abbreviata, lunulaque apicis albis; ano testaceo. / *C. Agilis* Klug / *C. Auraria* Schönherr / Elle se trouve dans l'île de Saint-Domingue, et je l'ai reçu de M. le conte de Mannerheim, sous le nom que je lui ai conservé." –

Cicindela boops, KLUG 1834, p. 27 [Separates *C. auraria* from *C. boops*, cf. JONGE POERINK 1953, p. 122.]; BATES 1890, p. 506 ["C. boopi (Mann.) et C. aurariae (Klug) proxima affines, differt inter alia, elytrorum margine albo postice profunde indentata."]; LENG & MUTCHLER 1914, p. 393 [Haiti, Cuba.]; HORN 1915, p. 402; LENG & MUTCHLER 1916, p. 691–692, fig. 2, pl. 12 fig. 4 [Puerto Rico; short descr.]; 1917, p. 194 [*bŏops*]; HORN 1926, p. 304; BEATTY 1944, p. 132 [St. Croix]; BLACKWELDER 1944, p. 17; WOLCOTT 1948, p. 226, fig. 1 [Puerto Rico "only around alkali flats and near salt ponds of the southwestern corner of the island: at Faro de Cabo Rojo, Parguera, Guánica and Ensenada."]; JONGE POERINK 1953, p. 122, 127, pl. 15 [Differences between *C. auraria* and *C. boops*; Cuba, Hispaniola, Puerto Rico, Jamaica.]; MISKIMEN & BOND 1970, p. 78; IVIE 1983, p. 194–196, fig. 2b [Anegada, St. Croix].

Dromochorus (*Ellipsoptera*) *boops*, SCHILDER 1953, p. 560.

Habroscelimorpha boops, RIVALIER 1954, p. 259, fig. 4b; BOYD 1982, p. 15.

PUERTO RICO: *Cabo Rojo*, Saliña Corozo, salty mudflat, 18.IX.1963 (1 ♂ 2 ♀♀). *La Parguera*, E of Cabo Rojo, Saliña Papayo, muddy salt flat, 13.IX.1963 (13 ♂♂ 3 ♀♀). *Isla Magueyes*, S of La Parguera, at light, 13.IX.1963 (1 ♀).
TURKS ISLANDS: *Grand Turk*, VI.1957, T. H. Farr (2 ♂♂ 7 ♀♀).
CAICOS ISLANDS: *South Caicos*, central lowlands, 19.IV.1954, G. R. Proctor (1 ♂); VI.1957, T. H. Farr (1 ♂).
JAMAICA: *Port Henderson*, salina, 30.I.1953, R. P. Bengry (1 ♂ 2 ♀♀); 31.I.1953, Bengry (6 ♂♂ 7 ♀♀); *Hellshire Hills*, St. Catherine, VIII.1970, Jamaica Hellshire Survey, Deanery 5 (2 ♀♀). All specimens from the last three islands from Science Museum, Inst. of Jamaica, Kingston.

Body length ♂ 8.6–*10.0*–11.0 ♀ 9.0–*10.5*–11.8 mm; width ♂ *3.7* ♀ *4.0* mm; ♂ 2.7 ♀ 2.6 times as long as wide. (Measurements of 24 ♂♂ 20 ♀♀ from Puerto Rico, Jamaica and Caicos & Turks Islands; see Table 2).

Labrum (Figs. 33, 37a–c) brownish, with 6 submarginal setae. Frontal margin outwards curved, with a distinct triangular tooth.

Head, including genae, glabrous (except for 2 supra-orbital hairs). Width across the eyes about 1½ pronotum-width = 3/7 elytron-length.

Pronotum about *1.6* mm in length ♂ *2.0* ♀ *2.1* mm wide, about 1⅓ as broad as long. Median grove rather shallow, transverse furrows more deeply impressed. Lateral sides sparsely clothed with decumbent bristles.

Penis about 4½ mm long, rather plump, about 5½ times as long as wide. Flagellum encompassing one and a half loop (Figs. 39c, 40c). Seven chitinous plates counted.

Legs (cf. Tables 3 and 4) of ♂♂ distinctly longer than of ♀♀, cupreous brown or testaceous. I, II and III in ♂♂ about 1.35, 1.65 and 2.0 times elytron-length, resp., equalling about 0.85, 1.0 and 1.25 body-length. I, II and III in ♀♀ about 1.2, 1.4 and 1.75 elytron-length, equalling about 0.75,

0.9 and 1.15 body-length. Femur III about ♂0.7 ♀0.65; tibia III ♂0.65 ♂0.6 elytron-length. Trochanters I and II with a single large seta.

Elytron ♂5.5–*6.5*–7.4 ♀6.0–*6.9*–7.8 mm in length, about ♂3.6 ♀3.5 as long as wide, i.e. more slender than in *C. auraria*, with lateral sides less convex and apex a little more rounded; more rounded in the ♀ than in the ♂, with a distinct apical spine, without an inward curve in the last 1/5 part of the lateral side. Yellowish-white marking generally less wide and more distinct as in *C. auraria*, with a marginal area which is often interrupted by the dark hook in the Puerto Rico specimens.

Cicindela carthagena jamaicana (van Nidek, 1980)

[Pl. III a–c; figs. 34c–d, 37d–g]

Cicindelidia carthagena jamaicana BROUERIUS VAN NIDEK, 1980, p. 129 ["Jamaica, Duncans, Try, 21–23.VIII.1966", 3♂♂ 6♀♀: "The colour of the elytra ... is brilliant blue-green with dark blue punctures and a velvet-like patch in the middle of each elytron in the colour of the elytra of the typical form. The medium elytral band is along the margin connected with the marginal spot, situated between this band and the apical lunula. The apex of the elytra runs sharper into the clear spine than in the typical form. ... differs from the typical form by its markings and its colour, and from *colossea* (W. Horn 1926), aside from colour and markings, by its size."]; BOYD 1982, p. 13.

[*Cicindela carthagena* Dejean, 1831: HORN 1915, p. 388; 1926, p. 289. *Dromochorus* (*Dromochorus*) *carthagena*, SCHILDER, 1953, p. 560. *Cicindelidia carthagena*, RIVALIER 1954, p. 257.]

JAMAICA: *Port Morant* (St. Thomas), 15.II.1956, R. P. Bengry (1♂). *Lyssons Beach* near Morant Bay, 6.IV.1953, Bengry (3♂♂). Two miles E of *Morant Bay*, 1.IV.1953, Bengry (1♂). *Bowden*, 28.VI.1954, T. H. Farr (2♀♀). *Palisadoes* (St. Andrew), 27.V.1947, G. B. Thompson (1♂). *Port Henderson* (St. Catherine) along beach, 21.I.1953, Bengry (3♂♂ 5♀♀). *Hellshire Hills*, salina, 22.VII.1970, Hellshire Survey, J. Ramessar (1♂). *Wreck Point*, 2.XII.1951, Bengry & Audrey M. Wiles (2♂♂ 1♀). *Green Bay*, 27.III.1955, Bengry (1♂). *Milk River* (Clarendon), 20.I.1952, Bengry (1♀). All specimens in the Institute of Jamaica, Science Museum. – *Duncans* (N coast of Trelawny), 21.VIII.1966, Howden & Becker (1♀). – *Great Saltpond* entrance at Port Clarence, near Port Henderson, sand bar near *Rhizophora*, with *C. trif. trifasciata*, 8.V.1973 (1♀). Last two specimens in the Zoöl. Museum of Amsterdam; four of the other ones presented to the R.M.N.H. Leiden.

Body length ♂9.5–*10.3*–11.5 ♀10.9–*11.2*–12 mm; width ♂*3.9* ♀*4.4* mm; ♂2.6 ♀2.5 times as long as wide. (Measurements of 11♂ 10♀ pinned

specimens from Sci. Mus. Jamaica; see Table 2.) [A single ♀ alcohol specimen from Great Saltpond measured 12.1 mm from head to apex of elytron.]

Labrum (Figs. 34c–d, 37d–g) yellowish white, with 6 (exceptionally 5) regularly placed submarginal setae. Frontal margin only very weakly curved, with a minute central denticle in ♂♂, more distinctly outward curved, with a rather well-developed triangular tooth in ♀♀.

Head, including genae, glabrous (except for one pair of supra-orbital hairs). Width across the eyes about 1½ pronotum-width = 3/7 elytron-length.

Pronotum ♂ *1.9* ♀ *2.0* mm in length; ♂ *2.3* ♀ *2.5* mm wide; about 1.2 times as broad as long. Median furrow weak but distinct; transverse furrows deeply impressed. Upper flanks clothed with decumbent bristles; front, mediodorsal and hindparts glabrous.

Legs (cf. Tables 3 and 4) of ♂♂ slightly longer than of ♀♀, shining cupreous-green. I, II and III in ♂♂ about 1.4, 1.5 and 2.0 times elytron-length, resp., equalling about 0.85, 0.9 and 1.2 body-length. I, II and III in ♀♀ about 1.3, 1.45 and 1.8 times elytron-length, equalling about 0.8, 0.9 and 1.1 body-length. Femur and tibia III about ♂ 0.65 ♀ 0.6 elytron-length. Trochanters I and II without a long seta.

Elytron ♂ 6.0–*6.4*–6.8 ♀ 6.7–*7.0*–7.5 mm in length, about ♂ 3.4 ♀ 3.1 as long as wide. Lateral side weakly convex. at 4/5 of its length turning off to the apex; the last 1/5 part finely serrated, ending into a little spine. The yellowish-white elytron marking consists of (see Pl. IIIa–c): 1) a hooked humeral lunula without a distinct proximo-medial branch: 2) a S-shaped middle band; 3) a hooked apical lunula; 4) a dot between the medial parts of the middle band and the apical lunula which may be narrowly connected with the proximal part of the apical lunula; 5) a marginal dot, situated between the apical lunula and the middle band, which may be narrowly connected with the latter, thus showing a tendency of forming an interrupted marginal area which connects the humeral and apical lunulae.

Though I am unable to discover any characteristics which would justify the creation of a new taxon on behalf of the Jamaican specimens of *Cicindela carthagena* Dejean, it may be wise to maintain the subspecies *jamaicana*, for the present. The occurrence of *C. carthagena* might be expected on other Greater Antilles, visa the ancient and probable erroneous record of *C. rufiventris* in Haiti.

Cicindela argentata Fabricius, 1801

[Pl. IVf; figs. 34e–g, 38a–c]

Cicindela argentata Fabricius, 1801, p. 242 ["C. capite thoraceque argentatis, elytris nigris puncto striga undata lunulaque pallidis. Habitat in America meridionali. D. Smidt. Mus. D. de Sehestedt."]

The specimens of *C. argentata* from Guadeloupe may be distinguished as var. *pallipes* Fleutiaux & Sallé, 1889, or as a subspecies.

Cicindela argentata, Dejean 1831, p. 215 ["reçu ... de M. Chevrolat, venant de la Guadeloupe..."]; Leng & Mutchler 1914, p. 393; Horn 1915, p. 406; Leng & Mutchler 1916, p. 690 [var. *pallipes* "Occurs only on Guadeloupe."]; 1917, p. 194 [var. *pallipes*]; Horn 1926, p. 308; Blackwelder 1944, p. 17.

Dromochorus (*Cicindosa*) *argentata*, Schilder 1953, p. 561.

Brasiella argentata, Rivalier 1954, p. 263; Balazuc & Chalumeau 1978, p. 22–23, fig. 3 [Several localities on Guadeloupe, Basse-Terre.].

Brasiella argentata pallipes, Rivalier 1955, p. 80, fig. 1d [Description of the type specimen from Guadeloupe in the Chaudoir collection.]; Boyd 1982, p. 15.

Curaçao: *Emmastad*, golf links, on brownish weathered diabase, 27.X.1956, R. H. Cobben (3 ♂♂ 3 ♀♀); at light, X.1956, Cobben (2 ♀♀). *Rio Canario*, 1956?, B. de Jong (1 ♀).
Trinidad: *St. Augustine*, trench along road, IX.1956, R. H. Cobben (1 ♂ 1 ♀).
Suriname: *Paramaribo*, at light, 19.XI.1946, coll. D. C. Geijskes (1 ♀); 2.XII.1958, Geijskes (1 ♂); V.1959, P. H. van Doesburg, jr. (1 ♀); at light, 10.IV.1962, Broekhuizen (1 ♂); Zorg en Hoop, 13.IX.1963, L. D. Brongersma (1 ♀). *Afobaka*, 20.X.1964, Geijskes (1 ♂). *Kabel*, 18.X.1958, van Doesburg (1 ♂). *Gansee*, 10.XII.1963, Geijskes (1 ♂). *Rainville*, 28.VII.1977, A. van Assen (1 ♂). All Surinam specimens from RMNH Leiden, labeled *Brasiella venustula* by Brouerius van Nidek.
West Indies, without data, possibly from Curaçao or Trinidad (3 ♀♀; identification doubtful).

Body length ♂ 6.5–*6.7*–7.0 ♀ 6.5–*7.4*–8.0 mm; width ♂ *2.3* ♀ *2.5* mm; 2.9 times as long as wide. (Measurements of 2 ♂♂ 6 ♀♀ from Curaçao and Trinidad; see Table 2).

Labrum (Figs. 34e–g, 38a–c) yellowish white, with 8 (sometimes 6 or 7) submarginal setae. Frontal margin slightly outwards curved, with a (very) small central tooth.

Head, including genae, glabrous (except for 2 supra-orbital hairs); dark cupreous brownish-green. Width across eyes about $1\frac{1}{4}$ pronotum-width $= \frac{3}{7}$ elytron-length.

Pronotum ♂ *1.3* ♀ *1.4* mm in length, ♂ *1.2* ♀ *1.4* mm wide, about as broad as long, sometimes slightly longer. Median groove and transverse furrows

rather indistinct. Upper lateral sides and front part near the median line sparsely clothed with decumbent bristles.

Legs (cf. Tables 3 and 4) of ♂♂ slightly longer than of ♀♀, testaceous. I, II and III in Surinam ♂♂ about 1.35, 1.5 and 2 times elytron-length, resp., equalling about 0.85, 0.9 and 1.2 body-length. I, II and III in ♀♀ from Curaçao and Suriname about 1.25, 1.4 and 1.8 times elytron-length, equalling about 0.75, 0.85 and 1.1 body-length. Femur and tibia III about 0.6 elytron-length. Trochanter I with a single large seta, II without.

Elytron ♂ 4.1–*4.3*–4.6 ♀ 4.4–*4.9*–6.3 mm in length, about ♂ 3.9 ♀ 3.7 as long as wide. Lateral side nearly straight, at 7/8 of its length rather abruptly turning off to the pointed apex. Margin of the last 1/8 part finely serrated, ending in a rather small (♀) to minute (♂) spine. Pits of sculpture shining green in a cupreous field. The yellowish-white elytron marking consists of: 1) a single dot in the middle of the proximal part; 2) a sometimes interrupted tortuous middle band; 3) a single dot in the middle of the caudal part; 4) an apical lunula along the lateral margin, not reaching the medial margin.

The specimens from Curaçao are resembling FLEUTIAUX & SALLÉ's var. *pallipes* from Guadeloupe. – In contrast to the other cicindelids mentioned in this paper, *C. argentata* occurs in inland localities, obviously avoiding sea shores and other saline habitats.

Cicindela marginata Fabricius 1775

[Pl. IVa; figs. 34a–b, 38d–e, 39f, 40g]

Cicindela marginata FABRICIUS, 1775, 1792, p. 176 ["C. viridis, elytris margine fascia undata punctisque duobus albis. Habitat in Virginia."] – LENG 1902, p. 162; LENG & MUTCHLER 1914, p. 393 [Bahamas, Cuba.]; HORN 1915, p. 394; LENG & MUTCHLER 1916, p. 690 [Occurs in Florida, Bahamas and Cuba. In the United States as far north as Maine, always on marshy sea coasts."]; 1917, p. 194; HORN 1926, p. 297; BLACKWELDER 1944, p. 18.

Dromochorus (*Ellipsoptera*) *marginata*, SCHILDER 1953, p. 561.

Ellipsoptera marginata, RIVALIER 1954, p. 267; BOYD 1982, p. 17.

FLORIDA: *Virginia Key*, sandy beach, 31.VIII.1963 (4 ♂♂ 2 ♀♀). *Key Biscayne* near Bear Cut, Sta. 690, white sand with decaying *Thalassia*, 7.IX.1963 (2 ♂♂ 3 ♀♀); sandy beach with mangroves, 1.IX.1963 (2 ♂♂ 4 ♀♀, badly preserved). *Banana R.*, Cocoa Beach, 23.VII.1966, R. D. & M. F. Ward (1 ♂, Zoöl. Mus. Amsterdam). *Coral Gables*, shore, det. K. Mandl 1958, C. Blumenthal (1 ♀, Zoöl. Mus. Amsterdam).

SOUTH CAROLINA: *Beaufort* near Huntington Island, salty mudflat with grasses, 29.VIII.1963 (1 ♂ 1 ♀).

Body length ♂ 10.0–*11.0*–12.3 ♀ 10.5–*11.0*–11.3 mm; width ♂ *4.3* ♀ *4.8* mm; ♂ 2.5 ♀ 2.3 times as long as wide. (Measurements of 6♂ 5♀ alcohol specimens; see Table 2.).

Labrum (Figs. 34a–b, 38d–f) yellowish brown, with 9–13 submarginal setae. Frontal margin only weakly and often irregularly curved, with a small, more or less triangular tooth in ♀♀.

Head sparsely covered with short decumbent bristles, the genae densely covered. Width across the eyes about $1\frac{1}{4}$ pronotum-width = 3/7 elytron-length.

Pronotum ♂ *2.1* ♀ *2.0* mm in length; ♂ *2.2* ♀ *2.4* mm wide; about ♂ *1* ♀ *1.2* times as broad as long. Median furrow rather weakly, transverse furrows more deeply inpressed. Upper lateral parts, front, hindpart along the subbasal transverse furrow, and the region along the median line, sparsely covered with decumbent bristles.

Penis about $4\frac{1}{2}$ mm long, plump and club-like, about 4 times as long as wide. Flagellum making three loops or more (Figs. 39d, 40f). Six chitinous plates counted.

Legs (cf. Tables 3 and 4) of ♂♂ only very little longer than of ♀♀. I, II and III in ♂♂ about 1.4, 1.7 and 2.2 times elytron-length, resp., equalling about 0.8, 1.0 and 1.3 body-length. I, II and III in ♀♀ about 1.3, 1.6 and 2.05 times elytron-length, equalling about 0.8, 0.95 and 1.25 body-length. Femur and tibia III about ♂ 0.7 ♀ 0.65 elytron-length. Trochanters I and II with a single long seta.

Elytron ♂ 6.1–*6.9*–7.6 ♀ 6.5–*7.0*–7.4 mm in length, about ♂ 3.1 ♀ 2.9 as long as wide. Lateral side weakly convex, at 4/5 of its length turning off to the truncated apex; the last 1/5 part finely serrated, ending into a rather sharply projecting spine. The yellowish-white elytron marking consists of (see Pl. IVa): 1) a not well-defined hooked humeral lunula with a more or less isolated big dot which may be considered as its proximo-medial branch, and narrow, strongly curved disto-medial branch; 2) a sharply tortuous middle band which is many times interrupted in its caudally directed part; 3) a hooked apical lunula; 4) an uninterrupted marginal area which broadly connects the humeral and apical lunulae.

Cicindela dorsalis media LeConte, 1856

[Pl. IVb; fig. 38f–g, 39g, 40h]

Cicindela dorsalis SAY, 1817, p. 20 ["Brassy: elytra white; two curved lines on each, suture and curved branch near the base green; lip and tail pail. Inhabitats New Jersey."]; 1818, p. 415, pl. 13 fig. 5. – SCHAUP 1884, p. 98, fig. 91 [14½–15 mm], p. 99, fig. 93 [var. *media*, 13–14 mm, in Ga, S.C., N.C., Fla.]; LENG 1902, p. 161; HORN 1915, p. 392 & 1908, p. 37, figs. 154–155; 1926, p. 295; CAZIER 1954, p. 293–294.
Ellipsoptera dorsalis, SCHILDER 1953, p. 560.
Habrosclerimorpha dorsalis, RIVALIER 1954, p. 158.
Habrosclerimorpha dorsalis media, BOYD 1982, p. 14.

SOUTH CAROLINA: *Beaufort*, Huntington Island, ocean coast, hiding under tree trunk on white sand shore, 29.VIII.1963 (2♂♂ 2♀♀).

The specimens from Beaufort, S.C., belong to the "Florida east coast north to New Jersey population" described as *C. dorsalis* var. *media* LeConte, 1856.

Body length 11.8–*12.1*–12.4 mm; width about *5.0* mm; 2.5 times as long as wide (See Table 2).

Labrum (Fig. 38f–g) yellowish brown, with 6 submarginal setae. Frontal margin very slightly outwards curved or almost straight, more or less undulated, with a small triangular tooth which is less developed in ♂♂.

Head, including genae, glabrous, except for 2 supra-orbital hairs. Width across the eyes about $1\frac{1}{10}$ pronotum-width = about 3/7 elytron-length.

Pronotum 2.2 mm in length, about *2.8* mm wide, about 1.25 times as broad as long. Median grove and transverse furrows distinct. Lateral parts and frontal and caudal areas densely covered with decumbent bristles; central upper part more sparsely covered.

Penis about $4\frac{2}{3}$ mm long, slender, about 8 times as long as wide. Flagellum making a single loop only. Seven chitinous plates counted.

Legs (cf. Tables 2 and 3) of ♂♂ distinctly longer than of ♀♀. I, II and III in ♂♂ about 1.25, 1.5 and 2.0 times elytron-length, resp., equalling about 0.8, 1.0 and 1.3 body-length. I, II and III in ♀♀ about 1.1, 1.3 and 1.8 elytron-length, equalling about 0.7, 0.85 and 1.2 body-length. Femur and tibia III about ♂ 0.8 and 0.6 ♀ 0.75 and 0.55 elytron-length. Trochanters I and II with a single long seta.

Elytron ♂ *7.7* ♀ *7.8* mm in length, about 3.2 times as long as wide. Lateral side weakly convex; the proximal 1/5 part rather abruptly narrowing towards the shoulders; the distal 1/5 part finely serrated, turning

off to the somewhat truncated apex, ending into a minute spine. The yellowish-white marking is dominating to such an extent that there are only a few arabesque-like striae left (Pl. IVb).

Simplified Key to the Cicindelids

BASED ON MATERIAL TREATED IN THIS PAPER

1*a* Genae glabrous 3
1*b* Genae with decumbent bristles 2

2*a* Yellowish-white elytron marking consists of a wide, uninterrupted marginal area extending from shoulder to apex, more or less trilobed within (Pl. Ic) . . . . . *C. auraria*
2*b* Yellowish-white elytron marking consists of a broad, uninterrupted marginal area which connects the humeral and apical lunulae, and a sharp tortuous middle band which is often interrupted in the caudally directed medial part (Pl. IVa). . . . . *C. marginata*

3*a* Yellowish-white elytron marking consists of a rather wide, generally uninterrupted marginal area extending from shoulder to apex, more or less distinctly trilobed within (Pl. IIb). . . . . *C. boops*
3*b* Yellowish-white elytron marking consists of an often rather capricious design which may be strongly dominant 4

4*a* Yellowish-white marking dominant in such a way that only a few arabesque-like figures are left, including a longitudinal loop (Pl. IVb) . . . . . *C. dorsalis*
4*b* Yellowish-white marking consists of a tortuous and often rather capricious design which may be strongly dominant 5

5*a* Hindleg not very long, generally about $1\frac{1}{4}$ body-length, its femur about as long as the tibia, less than 3/4 elytron-length. . . . 7
5*b* Hindleg very long, generally about $1\frac{1}{2}$ body-length in males, its femur much longer as the tibia, equalling elytron-length; first and second trochanter without setae 6

6*a* Yellowish-white marking consists of a semicircular humeral lunula,

a strongly tortuous and often middle band, a semicircular apical lunula, and a connecting marginal area (Pl. IIa) . . . . . *C. graphiptera graphiptera*

6*b* Yellowish-white strongly dominant of the dark parts are only a few character-like figures left (Pl. Ib) . . . *C. graphiptera fulgidiceps*

7*a* Yellowish-white marking consisting of single dots in the middle of the proximal and distal parts, a tortuous middle band, and an apical lunula along the lateral margin; first trochanter with a single seta (Pl. IVf). . . . . *C. argentata*

7*b* Yellowish-white marking without single dots in the proximal and distal parts 8

8*a* Yellowish-white design with a dot between middle band and apical lunula; first and second trochanter without a single long seta (Pl. IIIa–c) . . . . . *C. carthagena jamaicana*

8*b* Yellowish-white design without a dot between middle band and apical lunula; first trochanter with a single long seta 9

9*a* Margin of labrum nearly straight, with very small central tooth; pronotum about $1\frac{1}{4}$ as wide as long, its median line rather indistinct; length of elytron mostly about $5\frac{1}{2}$ mm 11

9*b* Margin of labrum curved, somewhat roof-shaped, with rather well-developed central tooth; pronotum about $1\frac{1}{2}$ as wide as long, its median line distinct; length of elytron mostly about $6\frac{1}{2}$ mm. 10

10*a* Tortuous design striking, with an uninterrupted marginal area and a distinct humeral lunula (Pl. Id) . . . . . *C. trifasciata trifasciata*

10*b* Tortuous middle band narrow, humeral lunula mostly consisting of a small spot only (Pl. IIc) . . . . . *C. trifasciata ascendens*

11*a* Yellowish-white strongly dominant, leaving a few dark parts only, especially along the suture; no lunulae can be distinguished (Pl. IIe) . . . . . *C. suturalis suturalis*

11*b* Tortuous middle band and sharply hooked lunulae rather wide (Pl. IVc, e) . . . . . *C. suturalis hebraea*

11*c* Tortuous middle band and lunulae rather narrow (Pl. IId) . . . . . *C. suturalis guadeloupensis*

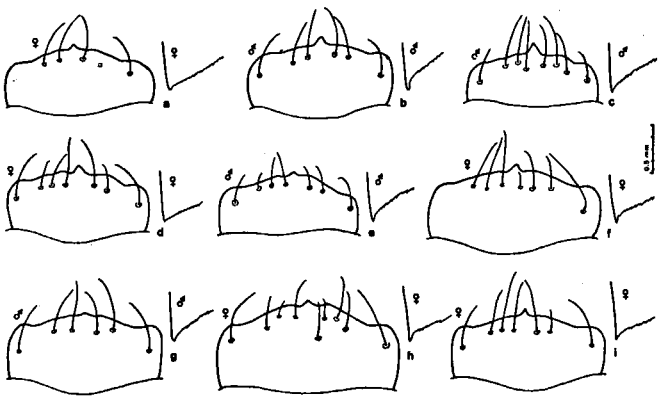

Fig. 28. Labrum and apex of right elytron of *Cicindela auraria*, from above: *a* from Margarita (Punta de Piedras); *b–d* from Bonaire (*b–c* Lagoen, *d* Salinja Martinus); *e–f* from Klein Bonaire; *g–i* from Aruba (Spaans Lagoen). – Half of the specimens in *C. auraria* have 6 submarginal setae, the other half 7 to 8, rarely 9. – Margin of labrum in males as a rule less protruding than in females. Apex of elytron in the female a little less pointed than in the male.

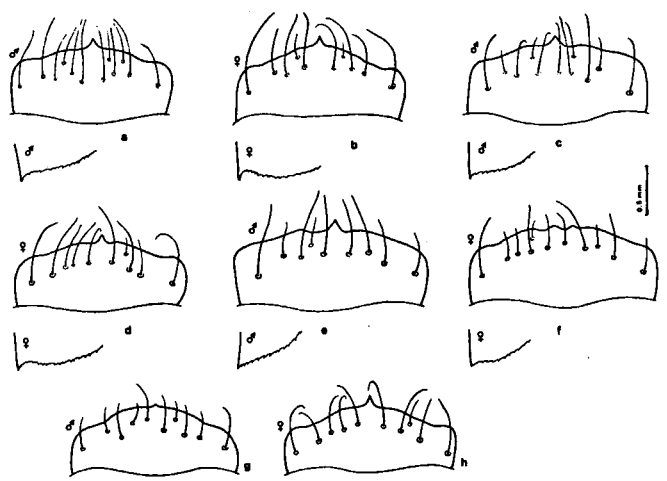

Fig. 29. Labrum and apex of right elytron of *Cicindela trifasciata trifasciata*: *a–b* from St. Martin (Simson Lagoon); *c–d* from Grand Turk; *e–f* from South Caicos; *g–h* from Jamaica (Hope River). – The labrum of *C. trifasciata* has a variable number of submarginal setae, 8–13. – Margin of labrum in males generally a little less protruding than in females. Apex of elytron in the female less pointed than in the male.

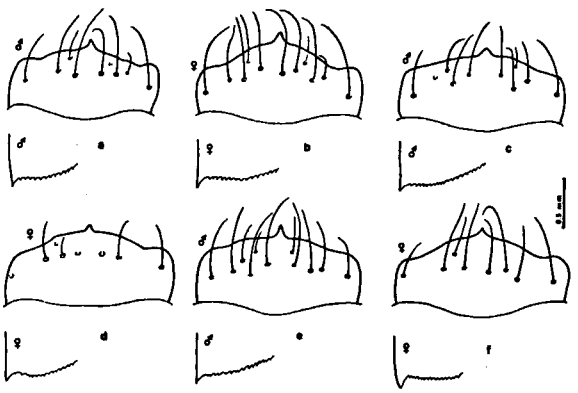

Fig. 30. Labrum and apex of right elytron of *Cicindela trifasciata trifasciata*: *a–b* from Antigua (St. John's); *c–d* from Barbuda (Great Lagoon); *e–f* from St. Kitts (Frigate Bay). – Cf. Fig. 29.

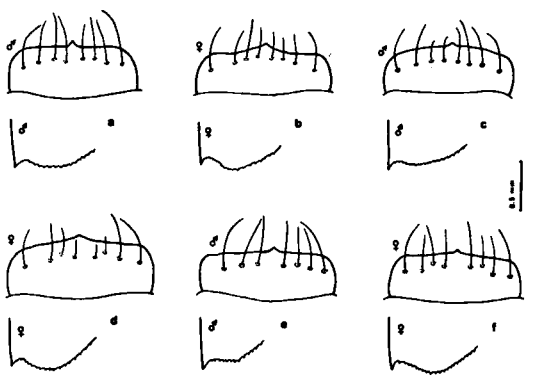

Fig. 31. Labrum and apex of right elytron of *Cicindela suturalis suturalis*: *a–b* from St. Thomas (Magens Bay); *c–d* from Barbuda (Martello Tower beach); *e–f* from Antigua (Deep Bay). – The labrum of *C. suturalis* has commonly 8 submarginal setae, sometimes 9 or 10, more rarely 7. – Margin of labrum in males not protruding or only slightly curved outwards. Apex of elytron especially in females distinctly truncated.

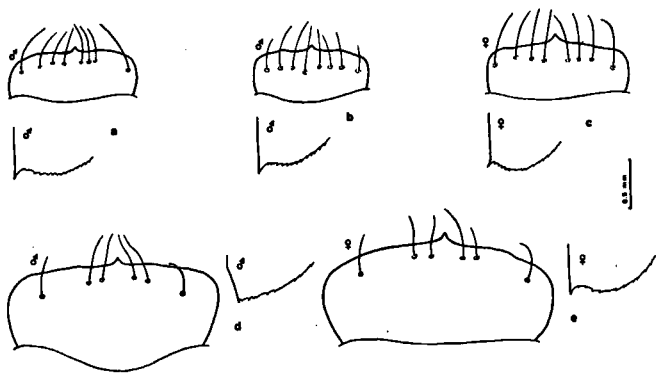

Fig. 32. Labrum and apex of right elytron of *Cicindela suturalis hebraea* (a–c) and *C. graphiptera fulgidiceps* (d–e): *a* from Tobago (Red Point); *b–c* from Trinidad (*b* Los Gallos Point, *c* Cocos Beach); *d–e* from Margarita (*d* Punta de Piedras, *e* Punta Mosquito). – The labrum of *C. graphiptera* has commonly 6 submarginal setae, sometimes 7 or 8. – Margin of labrum in males generally not protruding. Apex of elytron in females somewhat truncated.

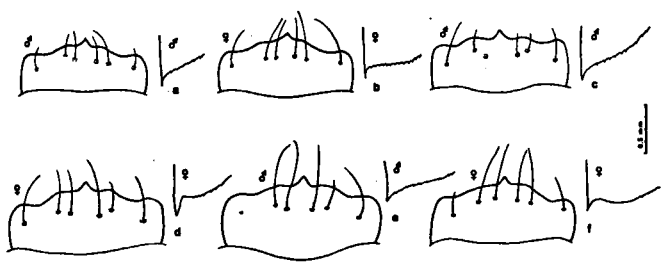

Fig. 33. Labrum and apex of right elytron of *Cicindela boops*: *a–b* from Jamaica (Port Henderson); *c–d* from South Caicos; *e–f* from Puerto Rico Saliña Papayo). – The labrum of *C. boops* has 6 submarginal setae. – Margin of labrum in males generally less protruding than in females. Apex of elytron in the female less pointed than in the male.

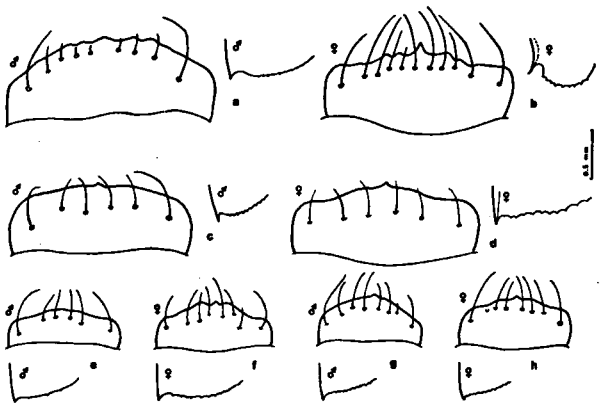

Fig. 34. Labrum and apex of right elytron of *Cicindela marginata* (*a–b*), *C. carthagena jamaicana* (*c–d*) and *C. argentata* (*e–g*). – The labrum of *C. marginata* showed 9–11 submarginal setae; *C. carthagena* 6, and *C. argentata* commonly 8. – Margin of *C. marginata* more or less irregularly curved, of *C. carthagena* and *C. argentata*, generally less protruding in males than in females. Apex of elytron as a rule less pointed in the females.

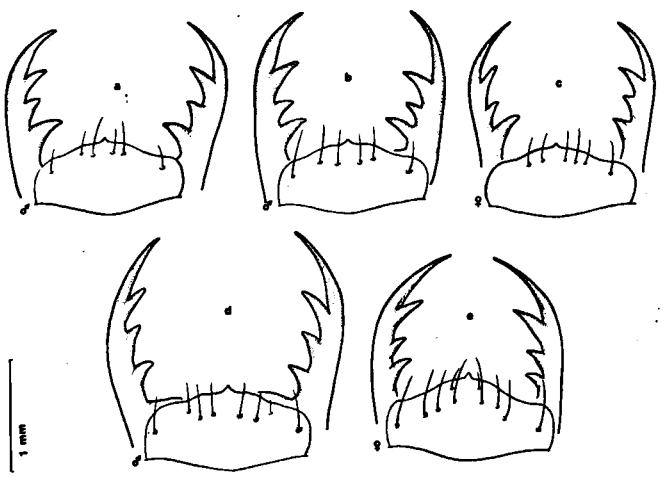

Fig. 35. Labrum and mandibles of *Cicindela auraria* (a–c) and *C. trifasciata trifasciata* (d–e): a–c from Curaçao (St. Jorisbaai); d from Barbuda (S of Codrington Village); e from Antigua (Dickinson Bay).

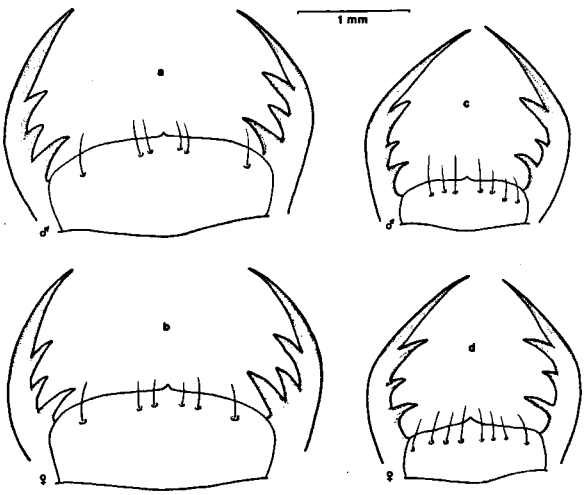

Fig. 36. Labrum and mandibles of *Cicindela graphiptera fulgidiceps* (a–b) and *C. suturalis suturalis* (c–d): a–b from Margarita (Pta Piedras); c–d from Antigua (Dickinson Bay).

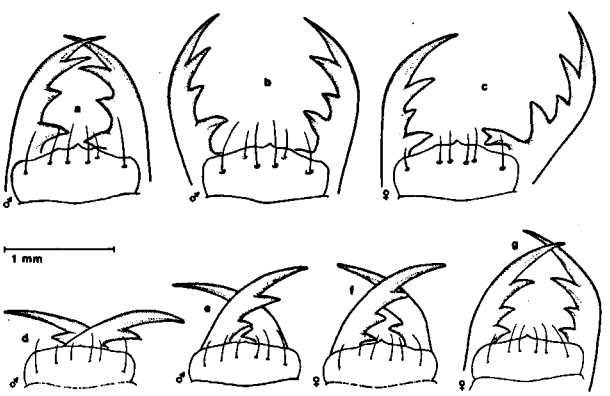

Fig. 37. Labrum and mandibles of *Cicindela boops* (a–c) and *C. carthagena jamaicana* (d–g): a–c from Puerto Rico (a–b Sal. Papayo, c Sal. Corozo); d–g from Jamaica (d Green Bay, e Port Morant, f–g Port Henderson).

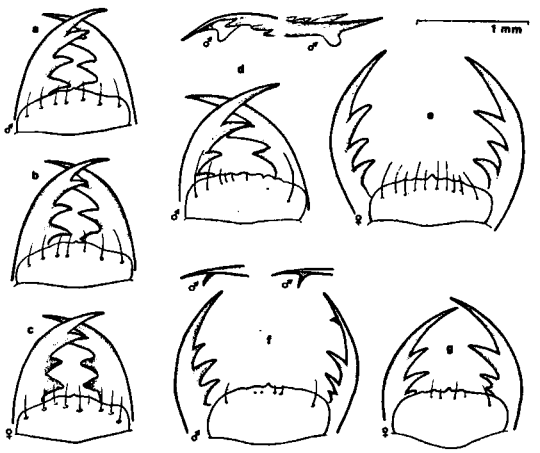

Fig. 38. Labrum and mandibles of *Cicindela argentata* (a–c), *C. marginata* (d–e) and *C. dorsalis* (f–g): a–b from Curaçao, c from unknown Caribbean locality; d–e from Florida (d Virginia Key, e Key Biscayne); f–g from South Carolina (Beaufort) – with details of bifurcated tip of right ♂ mandible in two specimens of *C. marginata* and *C. dorsalis*.

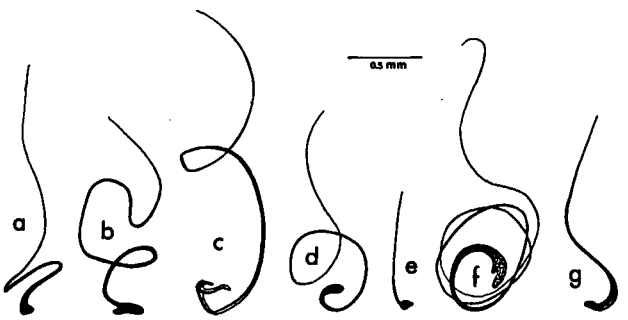

Fig. 39. Flagellum from the male copulatory organ of: a, *Cicindela auraria*, *b*, *C. trifasciata trifasciata*; c, *C. boops*; d, *C. suturalis hebraea*; e, *C. graphiptera fulgidiceps*; f, *C. marginata*; g, *C. dorsalis media*.

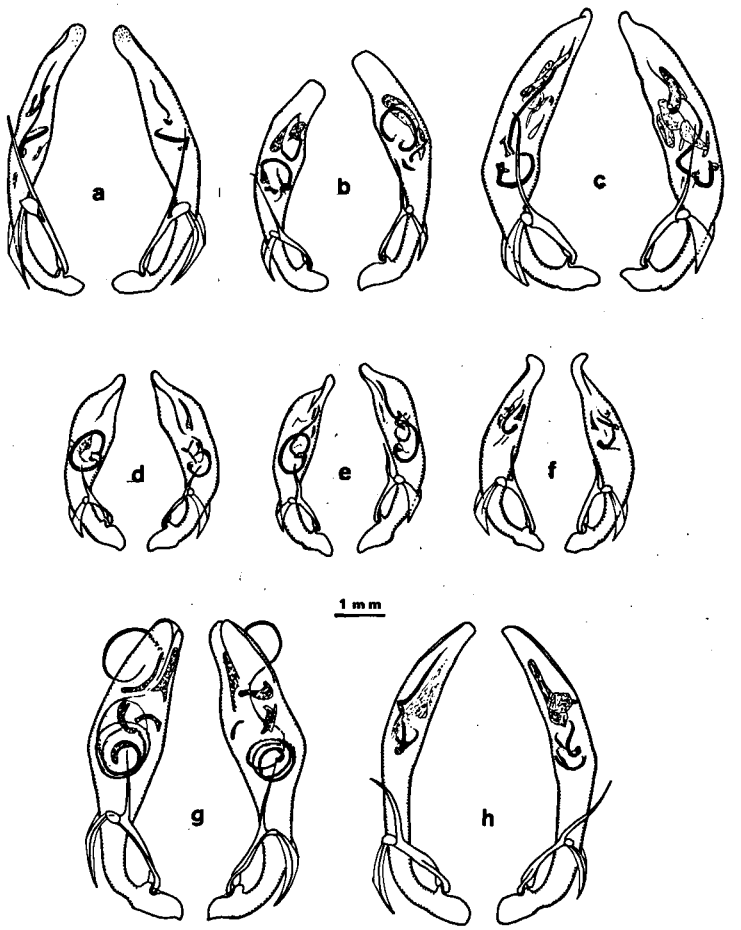

Fig. 40. Male copulatory organ (penis, aedoeagus) of: a, *Cicindela auraria*; b, *C. trifasciata trifasciata*; c, *C. boops*; d, *C. suturalis suturalis*; e, *C. suturalis hebraea*; f, *C. graphiptera fulgidiceps*; g, *C. marginata*; h, *C. dorsalis media*.

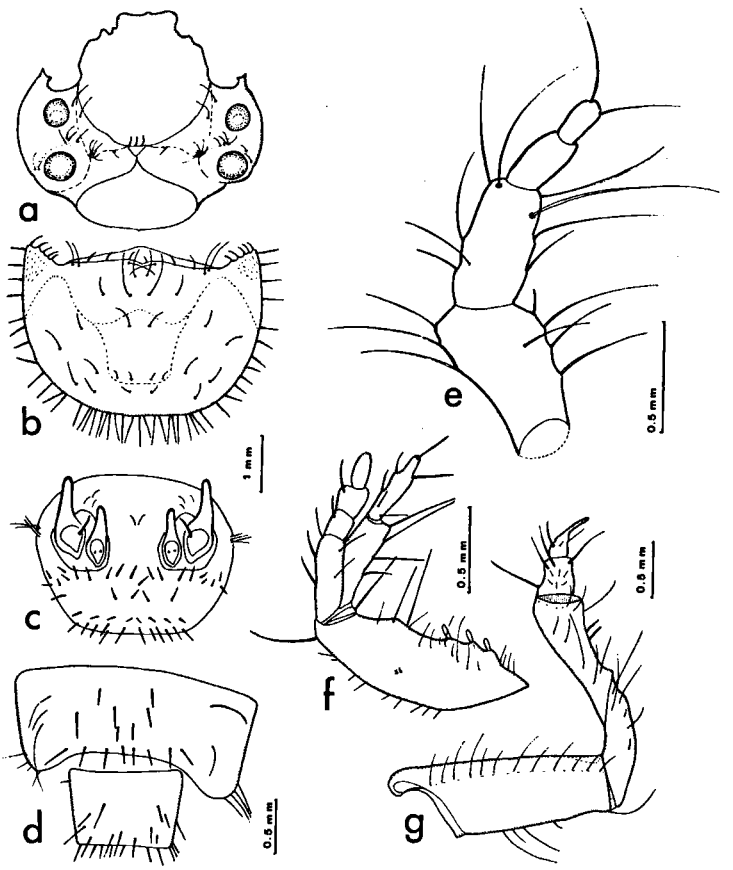

Fig. 41. Larva of *Cicindela auraria* from the mudflats of Santa Martha, Curaçao: a, head; b, pronotum; c, fifth abdominal segment; d, segments nine to ten – all dorsal aspect; e, antenna; f, maxilla; g, metathoracic leg.

TABLE 2

MEASUREMENTS IN *Cicindela*, IN MM

by CARLA OLDENBURGER, in which a few unpublished data from JONGE POERINK's paper (+) are included.

		Elytron length	width	Pronotum l.	w.	Head l.	w.	Body l.	w.	El. l./w.	Pron. w./l.	Head w./l.	Body l./w.
						C. auraria							
	Aruba												
♂	2	6.7 – 6.8	*2.0*	*1.6*	*2.5*	*1.7*	*3.1*	*10.3*	*4.0*	*3.4*	*1.6*	*1.7*	*2.5*
♀	3	6.6–*7.0*–7.4	*2.2*	*1.6*	*2.5*	*1.8*	*3.4*	*10.6*	*4.4*	*3.2*	*1.5*	*1.9*	*2.2*
♂	6+	*6.2*	*2.0*	*1.5*	*2.3*			*9.5*	*4.0*	*3.1*	*1.4*		*2.4*
♀	6+	*6.7*	*2.1*	*1.6*	*2.5*			*10.0*	*4.2*	*3.2*	*1.5*		*2.4*
	Bonaire												
♂	13	5.2–*6.2*–6.8	*1.9*	*1.5*	*2.2*	*1.5*	*2.8*	*9.5*	*3.9*	*3.3*	*1.5*	*1.8*	*2.4*
♀	13	5.7–*6.3*–7.0	*2.0*	*1.5*	*2.3*	*1.6*	*3.0*	*9.6*	*4.2*	*3.2*	*1.5*	*1.9*	*2.3*
	Klein Bonaire												
♂	17+	*6.3*	*2.0*	*1.5*	*2.2*			*9.5*	*3.9*	*3.2*	*1.4*		*2.4*
♀	26+	*6.5*	*2.1*	*1.5*	*2.3*			*9.6*	*4.1*	*3.1*	*1.5*		*2.3*
	Margarita												
♂	5	5.0–*6.0*–6.4	*1.8*	*1.4*	*2.0*	*1.4*	*2.6*	*8.7*	*3.6*	*3.2*	*1.4*	*1.8*	*2.4*
♀	4	5.0–*6.0*–6.4	*1.9*	*1.5*	*2.1*	*1.6*	*2.7*	*9.2*	*3.8*	*3.1*	*1.4*	*1.8*	*2.4*
	La Goajira (P. López)												
♂	8	*6.3*	*2.0*	*1.6*	*2.3*			*9.7*	*4.0*	*3.2*	*1.4*		*2.4*
♀	13	*6.5*	*2.1*	*1.6*	*2.4*			*9.8*	*4.3*	*3.0*	*1.4*		*2.3*
						C. trifasciata trifasciata							
	Antigua												
♂	7	5.8–*6.3*–6.7	*2.0*	*1.8*	*2.1*	*1.8*	*3.0*	*9.9*	*4.0*	*3.1*	*1.1*	*1.6*	*2.4*
♀	5	6.1–*6.4*–6.6	*2.1*	*1.9*	*2.2*	*1.8*	*3.2*	*10.3*	*4.3*	*3.1*	*1.1*	*1.7*	*2.4*
	Barbuda												
♂	5	6.5–*6.6*–6.8	*2.2*	*2.1*	*2.3*	*1.6*	*3.2*	*10.4*	*4.3*	*3.0*	*1.0*	*2.0*	*2.4*
♀	7	6.1–*6.7*–7.5	*2.3*	*1.9*	*2.4*	*1.7*	*3.2*	*10.3*	*4.6*	*2.9*	*1.2*	*1.9*	*2.2*
	St. Kitts												
♂	6	5.9–*6.4*–7.1	*2.0*	*1.8*	*2.1*	*1.6*	*3.0*	*9.7*	*4.3*	*3.2*	*1.1*	*1.8*	*2.4*
♀	6	6.1–*6.6*–7.7	*2.3*	*1.9*	*2.3*	*1.8*	*3.1*	*10.2*	*4.5*	*2.9*	*1.2*	*1.7*	*2.2*
	St. Martin												
♂	6	6.5–*6.7*–7.3	*2.1*	*1.9*	*2.2*	*1.7*	*3.0*	*10.5*	*4.2*	*3.2*	*1.1*	*1.7*	*2.5*
♀	6	6.3–*6.7*–7.4	*2.2*	*1.9*	*2.2*	*1.7*	*3.2*	*10.2*	*4.3*	*3.0*	*1.1*	*1.9*	*2.4*
♂	22+	*7.0*	*2.1*	*2.0*	*2.5*			*10.9*	*4.2*	*3.3*	*1.2*		*2.6*
♀	16+	*7.3*	*2.4*	*2.1*	*2.5*			*11.3*	*4.7*	*3.1*	*1.2*		*2.4*

Table 2 (cont.)

		Elytron length	width	Pronotum l.	w.	Head l.	w.	Body l.	w.	El. l./w.	Pron. w./l.	Head w./l.	Body l./w.
		Grand Turk (dry specimens)											
♂	7	6.6–*7.0*–7.3	*2.0*	*2.0*	*2.4*	*2.1*	*3.2*	*11.0*	*4.0*	*3.5*	*1.2*	*1.5*	*2.7*
♀	4	6.7–*7.0*–7.5	*2.1*	*2.0*	*2.5*	*2.1*	*3.4*	*11.1*	*4.2*	*3.3*	*1.2*	*1.6*	*2.6*
		South Caicos (dry specimens)											
♂	6	6.0–*6.7*–7.6	*2.0*	*2.0*	*2.3*	*2.1*	*3.2*	*10.7*	*4.0*	*3.3*	*1.1*	*1.5*	*2.7*
♀	2	6.5 – 7.3	*1.9*	*2.0*	*2.4*	*2.3*	*3.2*	*10.8*	*3.7*	*3.6*	*1.2*	*1.4*	*2.9*
		Jamaica (dry specimens)											
♂	7	6.0–*6.6*–7.0	*2.0*	*1.9*	*2.2*	*1.8*	*3.0*	*10.0*	*3.9*	*3.3*	*1.1*	*1.6*	*2.5*
♀	1	6.8	2.0	2.0	2.3	2.2	3.1	10.7	4.0	3.4	1.1	1.4	2.6
						C. suturalis suturalis							
		Antigua											
♂	5	5.0–*5.2*–5.4	*1.6*	*1.5*	*1.8*	*1.3*	*2.3*	*7.9*	*3.2*	*3.2*	*1.2*	*1.7*	*2.4*
♀	5	5.0–*5.6*–5.9	*1.7*	*1.5*	*2.0*	*1.3*	*2.3*	*8.3*	*3.4*	*3.3*	*1.3*	*1.7*	*2.4*
		Barbuda											
♂	4	5.1–*5.2*–5.5	*1.5*	*1.4*	*1.8*	*1.3*	*2.3*	*8.0*	*3.1*	*3.4*	*1.3*	*1.8*	*2.6*
♀	6	5.4–*5.9*–6.5	*1.8*	*1.6*	*1.9*	*1.4*	*2.5*	*8.7*	*3.6*	*3.3*	*1.2*	*1.8*	*2.4*
		St. Thomas											
♂	4	5.0–*5.1*–5.2	*1.5*	*1.3*	*1.6*	*1.3*	*2.2*	*7.8*	*3.1*	*3.4*	*1.2*	*1.7*	*2.5*
♀	6	5.1–*5.4*–5.6	*1.6*	*1.4*	*1.8*	*1.3*	*2.4*	*8.1*	*3.2*	*3.4*	*1.2*	*1.8*	*2.5*
						C. suturalis hebraea							
		Trinidad											
♂	12	4.9–*5.1*–5.5	*1.4*	*1.4*	*1.7*	*1.3*	*2.2*	*7.8*	*2.8*	*3.6*	*1.2*	*1.7*	*2.7*
♀	6	5.4–*5.6*–5.7	*1.7*	*1.5*	*1.8*	*1.4*	*2.4*	*8.4*	*3.3*	*3.3*	*1.2*	*1.7*	*2.5*
		Tobago											
♂	5	4.8–*5.0*–5.3	*1.5*	*1.4*	*1.7*	*1.2*	*2.2*	*7.7*	*3.0*	*3.3*	*1.2*	*1.8*	*2.6*
♀	4	5.2–*5.5*–5.8	*1.5*	*1.5*	*1.9*	*1.4*	*2.4*	*8.2*	*3.2*	*3.6*	*1.3*	*1.7*	*2.6*
						C. graphiptera fulgidiceps							
		Margarita											
♂	11	6.1–*6.5*–6.7	*1.8*	*1.6*	*2.3*	*1.7*	*2.7*	*9.8*	*3.7*	*3.6*	*1.4*	*1.6*	*2.6*
♀	13	7.0–*7.7*–7.9	*2.1*	*1.6*	*2.5*	*1.8*	*2.9*	*11.2*	*4.2*	*3.6*	*1.5*	*1.6*	*2.6*
		La Goajira (P. López)											
♂	15+	*6.3*	*1.8*	*1.6*	*2.4*			*9.9*	*3.5*	*3.6*	*1.5*		*2.8*
♀	10+	*7.4*	*1.9*	*1.7*	*2.6*			*11.4*	*3.8*	*3.9*	*1.5*		*3.0*
		La Goajira (R. Hacha)											
♂	4+	*6.0*	*1.5*	*1.5*	*2.2*			*9.4*	*3.1*	*3.9*	*1.4*		*3.0*
♀	5+	*7.4*	*1.9*	*1.7*	*2.5*			*11.4*	*3.9*	*3.8*	*1.5*		*3.0*

Table 2 (cont.)

		Elytron length	width	Pronotum l.	w.	Head l.	w.	Body l.	w.	El. l./w.	Pron. w./l.	Head w./l.	Body l./w.
						C. boops							
	S. Caicos & Gr. Turk (dry specimens)												
♂	3	6.5–*6.8*–7.1	*1.9*	*1.6*	*2.2*	*1.9*	*2.9*	*10.4*	*3.8*	*3.6*	*1.4*	*1.5*	*2.7*
♀	7	6.6–*7.3*–7.6	*2.0*	*1.7*	*2.2*	*2.1*	*3.1*	*11.0*	*4.0*	*3.6*	*1.3*	*1.5*	*2.7*
	Puerto Rico												
♂	14	6.4–*6.8*–7.4	*1.9*	*1.6*	*2.2*	*1.6*	*3.0*	*10.3*	*3.9*	*3.6*	*1.4*	*1.9*	*2.7*
♀	6	6.7–*7.1*–7.8	*2.2*	*1.6*	*2.4*	*1.8*	*3.2*	*11.0*	*4.4*	*3.3*	*1.5*	*1.8*	*2.5*
	Jamaica (dry specimens)												
♂	7	5.5–*6.0*–6.7	*1.6*	*1.5*	*1.8*	*1.7*	*2.6*	*9.3*	*3.4*	*3.8*	*1.2*	*1.5*	*2.7*
♀	7	6.0–*6.3*–6.7	*1.8*	*1.5*	*1.9*	*1.7*	*2.6*	*9.6*	*3.6*	*3.5*	*1.3*	*1.5*	*2.6*
						C. carthagena jamaicana							
	Jamaica (dry specimens)												
♂	11	6.0–*6.4*–6.8	*1.9*	*1.9*	*2.3*	*1.8*	*2.7*	*10.3*	*3.9*	*3.4*	*1.2*	*1.5*	*2.6*
♀	10	6.7–*7.0*–7.5	*2.2*	*2.0*	*2.5*	*2.2*	*3.0*	*11.2*	*4.4*	*3.1*	*1.2*	*1.3*	*2.5*
						C. argentata							
	Curaçao (dry specimens)												
♂	1	4.6	1.1	1.4	1.2	1.1	2.0	7.0	2.2	4.2	0.8	1.8	3.2
♀	5	4.4–*5.0*–6.3	*1.3*	*1.4*	*1.4*	*1.5*	*1.9*	*7.5*	*2.5*	*3.8*	*1.0*	*1.2*	*3.0*
	Trinidad (dry specimens)												
♂	1	4.1	1.2	1.2	1.2	1.2	1.8	6.5	2.4	3.4	1.0	1.5	2.7
♀	1	4.5	1.2	1.4	1.5	1.4	2.0	7.2	2.4	3.7	1.0	1.4	3.0
						C. marginata							
	Key Biscayne												
♂	6	6.1–*6.9*–7.5	*2.2*	*2.1*	*2.2*	*1.8*	*3.1*	*11.0*	*4.3*	*3.1*	*1.0*	*1.7*	*2.5*
♀	5	6.5–*7.0*–7.4	*2.4*	*2.0*	*2.4*	*2.0*	*3.3*	*11.0*	*4.8*	*2.9*	*1.2*	*1.6*	*2.3*

TABLE 3

AVERAGED MEASUREMENTS IN CICINDELA LEGS, IN MM.

		length of Elytron	*body*	III fem.	tib.	tar.	*leg*	II fem.	tib.	tar.	*leg*	I fem.	tib.	tar.	*leg*
							C. auraria								
	Curaçao														
♂	5	6.7	*10.7*	4.95	4.2	4.7	*13.8*	3.8	3.3	3.75	*10.9*	3.1	2.5	3.0	*8.7*
♀	8	6.6	*10.5*	4.75	4.1	4.1	*13.0*	3.7	3.3	3.3	*10.3*	3.1	2.5	2.8	*8.6*
	Bonaire														
♂	10	6.3	*10.2*	4.6	4.0	4.4	*13.0*	3.7	3.3	3.8	*10.5*	3.15	2.4	3.15	*8.7*
♀	10	6.65	*10.5*	4.55	3.9	3.9	*12.5*	3.55	3.05	3.05	*9.8*	3.05	2.35	2.8	*8.2*
							C. trifasciata trifasciata								
	Antigua														
♂	6	6.95	*11.6*	4.9	4.9	5.35	*15.1*	3.6	3.7	4.0	*11.0*	3.25	2.7	4.0	*10.0*
	Barbuda														
♂	9	6.5	*10.9*	4.6	4.5	5.05	*14.1*	3.5	3.5	3.8	*10.7*	3.2	2.5	3.8	*9.9*
♀	7	6.7	*11.1*	4.6	4.35	4.5	*13.6*	3.4	3.2	3.2	*9.1*	3.1	2.5	3.3	*8.9*
	St. Martin														
♂	10	6.95	*11.6*	4.9	4.7	5.2	*14.8*	3.75	3.6	4.05	*11.4*	3.5	2.7	4.0	*10.1*
♀	10	7.3	*12.3*	5.0	4.8	5.0	*14.7*	3.8	3.65	3.8	*11.2*	3.45	2.7	3.65	*9.8*
	Anegada														
♂	3	6.9	*11.0*	4.85	4.75	5.1	*14.7*	3.7	3.6	4.0	*11.3*	3.15	2.55	3.85	*9.6*
♀	4	6.85	*11.1*	4.85	4.55	4.85	*14.3*	3.9	3.45	3.5	*10.9*	3.2	2.5	3.35	*9.1*
							C. suturalis suturalis								
	Antigua & Barbuda														
♂	7	5.2	*8.4*	3.4	3.4	3.75	*10.5*	2.6	2.35	2.85	*7.8*	2.2	1.8	2.6	*6.7*
♀	7	5.45	*8.8*	3.5	3.45	3.7	*10.6*	2.7	2.35	2.75	*7.8*	2.3	1.8	2.45	*6.6*
							C. suturalis hebraea								
	Trinidad & Tobago														
♂	5	5.15	*8.3*	3.4	3.4	3.6	*10.4*	2.55	2.4	2.75	*7.7*	2.2	1.85	2.6	*6.6*
♀	5	5.4	*8.7*	3.6	3.5	3.5	*10.6*	2.65	2.45	2.75	*7.8*	2.3	1.85	2.4	*6.5*
							C. graphiptera fulgidiceps								
	Margarita														
♂	10	6.7	*10.85*	7.0	4.85	4.95	*17.0*	3.75	3.0	3.8	*10.5*	2.9	2.05	3.05	*8.0*
♀	10	8.0	*12.60*	7.0	4.75	4.8	*16.4*	3.8	3.0	3.45	*10.3*	2.95	2.05	2.85	*7.9*
							C. boops								
	Puerto Rico														
♂	10	7.15	*11.5*	5.05	4.6	4.85	*14.5*	4.0	3.75	3.9	*11.7*	3.35	2.7	3.7	*9.7*
♀	5	7.6	*11.6*	4.9	4.5	4.05	*13.4*	3.7	3.6	3.35	*10.6*	3.15	2.7	3.0	*8.9*
	Jamaica (dry specimens)														
♀	2	7.95	*12.2*	4.5	4.3	4.0	*12.8*	3.5	3.4	3.2	*10.1*	3.1	2.65	3.0	*8.8*

		length of Elytron	*body*	III fem.	tib.	tar.	*leg*	II fem.	tib.	tar.	*leg*	I fem.	tib.	tar.	*leg*
							C. carthagena jamaicana								
Jamaica (dry specimens)															
♂	4	6.25	*10.3*	4.15	4.05	4.15	*12.5*	3.15	2.9	3.5	*9.5*	3.0	2.35	3.5	*8.9*
♀	2	7.0	*11.3*	4.4	—	—	—	3.45	3.25	3.4	*10.1*	3.2	2.6	3.3	*9.1*
Jamaica (paratype dry)															
♀	1	6.8	—	4.0	4.2	3.8	*12.0*	3.2	3.0	3.25	*9.4*	3.0	2.3	3.2	*8.5*
Jamaica (Saltpond)															
♀	1	7.2	*11.6*	4.4	4.25	4.2	*12.8*	3.4	3.2	3.35	*9.8*	3.1	2.55	3.25	*9.1*
							C. argentata								
Curaçao (dry specimens)															
♀	2	4.55	*7.55*	2.45	2.75	3.1	*8.3*	2.9	2.0	—	—	1.9	1.5	2.2	*5.5*
Curaçao?															
♀	3	5.2	*8.7*	3.0	3.1	3.35	*9.4*	2.4	2.2	2.7	*7.3*	2.15	1.8	2.55	*6.5*
Suriname (dry specimens)															
♂	3	5.0	*8.15*	3.1	3.2	3.5	*9.9*	2.3	2.2	2.9	*7.4*	2.15	1.85	2.9	*6.8*
♀	3	5.1	*8.3*	3.0	3.0	3.0	*9.0*	2.4	2.1	2.45	*7.0*	2.25	1.8	2.5	*6.5*
							C. marginata								
Key Biscayne															
♂	6	7.2	*12.3*	5.2	4.9	5.9	*15.8*	3.95	3.70	4.6	*12.2*	3.4	2.7	4.15	*10.2*
♀	4	7.6	*12.6*	5.2	4.95	5.8	*15.8*	4.0	3.75	4.6	*12?*	3.3	2.7	4.0	*10.1*
							C. dorsalis								
S. Carolina (Beaufort)															
♂	2	7.7	*12.2*	6.25	4.9	4.85	*16.0*	4.4	3.5	3.9	*11.7*	3.6	2.5	3.5	*9.6*
♀	2	7.75	*12.1*	5.8	4.35	4.05	*14.2*	3.9	3.1	3.05	*10.1*	3.15	2.45	2.85	*8.4*

TABLE 4

AVERAGED MEASUREMENTS IN CICINDELA LEGS

EXPRESSED IN PERCENTAGES OF THE ELYTRON LENGTH

		Elytron – length in mm	III fem.	III tib.	III tar.	III *leg*	II fem.	II tib.	II tar.	II *leg*	I fem.	I tib.	I tar.	I *leg*
							C. auraria							
Curaçao														
♂	5	*6.7*	73.9	62.7	80.1	*206*	56.7	49.3	60.0	*162*	45.3	37.3	44.8	*130*
♀	8	*6.6*	71.7	62.1	62.1	*196*	56.1	50.0	50.0	*156*	47.7	38.2	43.2	*130*
Bonaire														
♂	10	*6.3*	72.5	63.5	69.8	*206*	59.0	52.0	59.7	*167*	49.1	37.6	49.7	*138*
							C. trifasciata trifasciata							
Antigua														
♂	6	*6.95*	70.7	70.7	77.0	*218*	52.1	53.4	57.7	*159*	46.9	39.0	57.7	*144*
Barbuda														
♂	9	*6.5*	70.8	69.2	77.7	*217*	53.8	53.9	58.8	*165*	49.2	38.2	58.5	*152*
♀	7	*6.7*	68.7	64.9	67.2	*203*	50.7	47.8	47.9	*135*	46.3	37.8	48.8	*133*
St. Martin														
♂	10	*6.95*	70.6	67.7	74.9	*213*	53.7	51.9	58.3	*164*	50.0	38.9	57.7	*146*
♀	10	*7.3*	68.5	65.5	67.9	*201*	52.1	50.0	52.0	*153*	47.3	37.0	50.0	*134*
Anegada														
♂	3	*6.9*	69.7	68.5	73.3	*212*	53.4	52.0	57.43	*162.6*	45.5	37.1	55.7	*138*
♀	4	*6.85*	71.1	66.9	70.7	*208*	57.0	49.9	50.97	*158.3*	47.2	36.9	49.0	*133*
							C. suturalis suturalis							
Antigua & Barbuda														
♂	7	*5.2*	65.4	65.6	72.1	*202*	50.5	45.7	54.4	*150*	42.5	35.0	50.4	*128*
♀	7	*5.45*	65.0	63.5	69.0	*198*	49.8	43.6	50.6	*145*	43.0	34.0	45.0	*122*
							C. suturalis hebraea							
Trinidad & Tobago														
♂	5	*5.15*	66.6	64.4	70.5	*203*	50.5	46.8	53.5	*151*	43.1	36.3	50.6	*130*
♀	5	*5.4*	65.7	64.3	67.5	*195*	49.1	45.8	51.0	*145*	42.7	34.0	44.1	*121*
							C. graphiptera fulgidiceps							
Margarita														
♂	10	*6.7*	104.5	72.1	73.6	*254*	55.8	44.8	56.7	*157*	43.3	30.6	45.6	*119*
♀	10	*8.0*	87.5	59.4	59.8	*205*	47.5	37.5	42.9	*128*	37.1	25.8	35.6	*99*
							C. boops							
Puerto Rico														
♂	10	*7.15*	70.4	64.4	67.8	*203*	56.0	52.7	54.6	*164*	46.9	38.0	51.5	*136*
♀	5	*7.6*	64.5	59.2	53.3	*176*	48.7	47.4	44.0	*139*	41.7	39.5	39.5	*117*

		Elytron – length in mm	III fem.	III tib.	III tar.	III *leg*	II fem.	II tib.	II tar.	II *leg*	I fem.	I tib.	I tar.	I *leg*
							C. carthagena jamaicana							
Jamaica (dry spec.)														
♂	4	*6.25*	66.5	64.9	66.4	*201*	50.5	46.5	56.1	*152*	48.1	37.9	56.1	*142*
♀	2	*7.0*	63.0	—	—	—	50.0	46.0	49.0	*145*	46.0	37.0	47.5	*130*
Jamaica (dry, paratype)														
♀	1	*6.8*	58.8	61.8	55.9	*176*	47.0	44.1	47.2	*138*	44.4	32.3	48.5	*125*
(Saltpond)														
♀	1	*7.2*	61.0	59.0	58.2	*178*	47.2	44.5	46.5	*136*	43.0	35.4	45.0	*126*
							C. argentata							
Curaçao (dry spec.)														
♀	2	*4.55*	53.4	60.1	67.2	*181*	40.0	41.0	—	—	42.1	33.3	47.2	*121*
Curaçao?														
♀	3	*5.2*	57.7	59.8	64.4	*180*	46.0	42.7	51.9	*140*	48.2	32.7	48.0	*125*
Suriname (dry spec.)														
♂	3	*5.0*	62.3	64.3	69.9	*199*	46.2	44.2	58.2	*148*	43.6	37.7	58.2	*137*
♀	3	*5.1*	59.5	58.1	59.3	*176*	47.7	40.8	48.1	*136*	44.0	35.3	49.1	*128*
							C. marginata							
Key Biscayne														
♂	6	*7.2*	72.2	68.0	81.9	*219*	54.9	51.4	63.9	*169*	48.0	37.5	57.6	*142*
♀	4	*7.6*	68.2	64.8	75.7	*207*	52.5	49.2	60.4	*161*	43.3	35.4	52.5	*132*
							C. dorsalis							
S. Carolina														
♂	2	*7.7*	81.2	63.5	63.0	*207*	57.1	45.5	50.7	*152*	45.8	32.5	45.5	*125*
♀	2	*7.75*	74.5	56.5	52.2	*183*	50.2	40.0	39.3	*130*	40.7	31.5	36.5	*108*

Megacephala acutipennis Dejean, 1825

[Pl. Vc; fig. 47a–b]

WAGENAAR HUMMELINCK 1955, p. 91–93, figs. 3–5, pl. 6 [Material from Hispaniola and Cuba; synonymy.]

Megacephala Acutipennis Dejean, 1825, p. 13 ["Obscuro-aenea; ore antennis, ano, pedibus elytromrumque apicis macula obliqua testaceis; elytris obliqua testaceis; elytris punctatis, aculeatis... Saint-Domingue"]. – *Megacephala acutipennis*, LENG & MUTCHLER 1914, p. 393 [Haiti, Cuba; *not* St. Thomas and Porto Rico.]; BOYD 1982, p. 4 ["Cuba, Hispaniola, ?Puerto Rico".]

Leg measurements in a few specimens from Haiti – already studied before (1955, p. 91) – proved that the male *M. acutipennis* – being on the average somewhat smaller than the female – has comparatively longer legs (cf. Tables 6 and 7).

Megacephala affinis affinis Dejean, 1825

[Fig. 47c–d]

WAGENAAR HUMMELINCK 1955, p. 93–95, figs. 6–7, 9–10, pl. 7 [Material from Trinidad and Hispaniola, Venezuela, Guiana, Brasil, Colombia and Honduras.]

Megacephala Affinis DEJEAN, 1825, p. 12–13 ["Viridi-obscura; ore, antennis, ano, pedibus elytrorumque apicibus macula communi cordata late emarginata testaceis; elytris subrugosus; geniculis obscuris. ... Cayenne."]

A few measurements indicate that the legs of the male specimens are slightly longer than those of the female individuals (cf. Tables 6 and 7).

Megacephala affinis gracilis Reiche, 1842

[Pl. Vb]

WAGENAAR HUMMELINCK 1955, p. 95–97, figs. 8–10, pl. 7 [Material from Curaçao and Colombia; synonymy.]

Megacephala carolina carolina (Linnaeus, 1767)

[Fig. 47g–i]

WAGENAAR HUMMELINCK 1955, p. 97–102, figs. 11, 14 and 16, pl. 6 [Material from U.S.A. and México.]

Measurements of a few specimens from various localities – for the greater part already studied before – do not show appreciable differences: the average size of the females being somewhat larger than that of the males, while the legs of the latter may be slightly longer (cf. Tables 6 and 7).

Megacephala carolina carolina L. forma **occidentalis** Klug, 1829

[Pl. Vd–e; fig. 47j]

WAGENAAR HUMMELINCK 1955, p. 102–103, figs. 12–13 and 15, pl. 6 [Material from Cuba; synonymy.]

Megacephala carolina occidentalis, BOYD 1982, p. 4 [Cuba, Bahamas (Watling Is.).]

JAMAICA: *Half Way Tree*, 25.X.1952, R. P. Bengry (1 ♂); 7.XI.1952, Bengry (1 ♀); 16.XI.1952, Bengry (1 ♂). Bank of *Hope River* above August Town, 19.X.1952, Bengry (2 ♂♂ 2 ♀♀); 19.X.1952, Bob Lynn and H. Lynn (1 ♂ 1 ♀); 30.X.1952, dr. W. G. Lynn (2 ♂♂ 2 ♀♀); Hope River bed behind U.C.W.E., 19.IX.1952, W. G. Lynn (1 ♀). *Beacon-Pedro Plains*, in hole in ground, clear weeded corn, terra rossa soil, 21.X.1953, W. B. Dixon (1 ♀). *Yallahs River* at Morant Bay Road, 31.X.1954, T. H. Farr (1 ♂). *Kingston* 10, 60 Renfield, 26.IX.1980, C. Christie (1 ♂). – All specimens from Sci. Mus. Jamaica.

GRAND CAYMAN: June 1962, T.H.Farr (1 ♂; lenght of elytron 9.5 mm, of penis 4.5 mm).

The material from Jamaica does not differ from that of Cuba described in 1955 (cf. Table 5). The Cayman specimen shows the distinguishing colour characteristics mentioned by LENG & MUTCHLER (1916, p. 687).

Megacephala sobrina Dejean, 1831

WAGENAAR HUMMELINCK 1955, p. 103–105 ["Admitting the very vague delimitation of the lower categories, ... a certain subdivision of the species *sobrina* in subspecies and varieties has been maintained, which may give some insight into its distribution and differentiation on the West-Indian islands."]
Megacephala sobrina, FERNÁNDEZ YÉPEZ & ROSALES 1956, p. 170 [Gran Roque.]

In most specimens the length of the elytron is 8½–10 mm, of the body (= elytron + pronotum + head without labrum) 15–16½ mm; legs I, II and III being a little over 1, about 1½, and almost 2 times elytron-length, resp. Though the female specimens, when averaged, are about 5% larger than the male individuals, their legs may be 5–10% shorter (cf. Tables 5–7).

Measurements of the following specimens from RMNH Leiden – labelled *M. sobrina confusa* Chd. by Mr. C. M. C. BROUERIUS VAN NIDEK – are included in Tables 6 and 7:
SURINAME: *Paramaribo*, Zorg en Hoop, 16.V.1955, D. C. Geijskes (1 ♂); 12.VI.1957, P. H. van Doesburg, jr. (2 ♀♀); Combé, 26.XII.1964, Geijskes (1 ♂). *Republiek*, along Coropina Kreek, at light, 15–17.VII.1977, A. van Assen (1 ♀); 9.VII.1978, van Assen (1 ♂).

"As the first description of the species prevents any classification of the type-specimens in minor systematic categories, ... material ... from ... Margarita and Los Testigos ... has been considered as representing the typical form of the subspecies *sobrina*." (cf. 1955, p. 105) If further restriction might be desirable, those specimens collected in the Patio of Hotel Central, Sta. 155, Porlamar, 25.V.1936, may be considered as lecto-type material (1955, p. 105, figs. 17a, c, f, h, j and 20a, c–e, pl. 8).

Megacephala sobrina sobrina Dejean, 1831 (forma typica)

[Pl. VIa–b; figs. 42a–b, e–f, 48a–d, 50a–d]

WAGENAAR HUMMELINCK 1955, p. 105–108, figs. 17–20, pl. 8 [Material from Margarita, Cubagua, Los Testigos and Patos.]

MARGARITA: *Punta Mosquito*, beach debris on sandy shore, Sta. 797, 13.I.1964 (3 ♂♂). Punta Mangle, debris on sandy shore, Sta. 800, 10.I.1964 (11 ♂♂ 3 ♀♀). *Punta Piedras*, sandy beach debris near lagoon entrance, Sta. 802, 9.I.1964 (10 ♂♂ 7 ♀♀).

The newly collected material agrees with that described before, the female individuals being slightly but distinctly larger than the male speci-

mens, e.g. at Sta. 802: average elytron-length ♂ *9.1* ♀ *9.85* mm, body ♂ 15.3 ♀ 16.5 mm (cf. Table 5).

Megacephala sobrina sobrina, forma **antiguana** Leng & Mutchler, 1916

[Pl. VIc; figs. 44–45, 49a–h, 51a–d]

WAGENAAR HUMMELINCK 1955, p. 108–110, figs. 17s–v, 20f–i, pl. 9 [Material from Antigua, St. Barts, St. Martin and Hispaniola; synonymy.]
Megacephala (Tetracha) sobrina, BALAZUC & CHALUMEAU 1978, p. 18–20, fig. 1 [Pro parte: St. Barts, also St. Martin and Tintamarre.]
Megacephala sobrina confusa Chaudoir, BOYD 1982, p. 4.
Megacephala sp., BUTLIN 1976, p. 128 [Anegada.]

BARBUDA: *Darby's Cave,* sink-hole in limestone terrace, Sta. 600, 10.VII.1955 (elytron). *Codrington Village,* limestone flat near lagoon, Sta. 603, 5.VII.1955 (elytron). *Low Pond,* brackish cattle pond near lagoon N of Codrington Village, Sta. 674a, 21.VII.1967 (61 ♂♂ 21 ♀♀).
ST. KITTS: Frigate Bay, near saltpond, Sta. 677, 20.VII.1955 (1 ♀).
ST. MARTIN: *Point Blanche,* below cow faeces near shore, 25.VII.1955 (3 ♂♂ 2 ♀♀). *Great Saltpond,* NE shore, debris on salty mud, Sta. (710), 29.IX.1963 (1 ♂). *Oyster Pond,* SE shore, below cow faeces on grassy area, 13.X.1963 (9 ♂♂ 15 ♀♀). *Cul-de-Sac,* 3.XI.1978, coll. F. Chalumeau (2 ♀♀).
ANEGADA: *Setting Point,* 9.VIII–21.IX.1975, R. K. Butlin (1 ♀, Br. Mus.).

The material collected on Barbuda perfectly agrees with that from St. Martin, except that the specimens from Low Pond are notably more robust than the Oyster Pond individuals (cf. Tables 5–7). In a single case the design of the elytrae resembled that of *M. sobrina infuscata,* the black spot superseding the dorsal area as far as about 9/10 sutural-length.

Megacephala sobrina sobrina, forma **bonaireana** Humlnk, 1955

[Pl. Va; figs. 42c–d, g–i, 43, 47f, 48e–o, 50e–h]

WAGENAAR HUMMELINCK 1955, p. 110–111, fig. 17–20, pl. 7 [Material from Bonaire, Klein Bonaire, Curaçao and Aruba; synonymy.]

BONAIRE: *Dos Pos*, below rock debris near fresh-water well NE of Goto, 5.XII.1963 (18 ♂♂ 9 ♀♀). *Goto*, near saltlake, V.1963, R. H. Cobben (1 ♂ 1 ♀). *Kralendijk*, at light, 7.XII.1963 (1 ♀). *Pos Francés*, low limestone flat with brackish mud S of Kralendijk, 1.IV.1955 (1 ♂ dead).
KLEIN BONAIRE: *Pos Calbas*, near puddle of brackish water on low limestone terrace, Sta. 63A, 3.XII.1963 (1 ♀).
CURAÇAO: *Boca Labadera*, N coast of Sta. Catarina, 29.III.1970 (1 ♂).
ARUBA: *Salinja Master*, near Savaneta, among debris near abandoned saltpan, 29.IV.1955 (1 ♀). *Rooi Bringamosa*, among plant decay and non-calcareous rock debris near brackish brooklet in central Aruba, Sta. (103B), 5.XI.1963 (6 ♂♂ 8 ♀♀); (103d), 20.X.1967 (1 ♂).

If it would be necessary giving this forma a more restricted area, it could be: type locality Bonaire, type lot (4 ♂♂ 2 ♀♀) from Deenterra, Sta. 186, 25.III.1937 (cf. 1955, p. 111; figs. 17k–m, o–p, r; 18a, d; 19e, and 20l; pl. 9, ♀).

The new material agrees with that described before (cf. Tables 5–7).

The female specimen of Salinja Master, Aruba, is exceptionally large: elytron-length 11 mm, total length 18 mm; width of body 6, of pronotum 4.3, of head 4.7 mm.

When comparing the Aruba material with the other sobrina's from the Leeward Group, F. VAN DER HEIDE observed the following differences.

MARGARITA specimens:	ARUBA specimens:	BONAIRE specimens:
Head		
usually a glossy green with a more or less *reddish* shine.	usually a glossy green with a more or less distinct *purple* shine.	*purple* colour *dominating* in central part, from without there often with green.
Pronotum		
a *glossy green* with a yellowish red to purple shine.	a *glossy green* with a yellowish red to purple shine.	*purple* colours *dominating* in central part; lateral parts green.

Elytron		
dorsal area a bright *yellowish red*, often with a *purple* touch; latero-dorsal area a *brilliant green* with a metallic shine, as a rule enclosing base and both lateral sides of the black spot, *covering* or nearly covering the entire *base* of the elytron.	dorsal area a bright *purple*, often with a *yellow* touch; latero-dorsal area a *brilliant green* with a metallic shine, as a rule enclosing base and both lateral sides of the black spot, *covering* or nearly covering the entire *base* of the elytron.	dorsal area a bright *purple*, most intensive near the suture; latero-dorsal area a *brilliant greenish blue.*

Megacephala sobrina infuscata Mannerheim, 1837

[Pl. VId; figs. 46c–e, i–k, 49i–l, 51e–h]

WAGENAAR HUMMELINCK 1955, p. 112–114, figs. 21–22, pl. 9 [Material from St. Croix, St. John, Puerto Rico, Hispaniola and Cuba; synonymy.]
Megacephala sobrina var. *infuscata*, WOLCOTT 1948, p. 225, fig.
Tetracha sobrina infuscata, BEATTY 1944, p. 131 [St. Croix.]
Megacephala sobrina, IVIE 1983, p. 192–194, fig. 1 [St. Thomas, Anegada, St. Croix.]
Megacephala (*Tetracha*) *sobrina*, BALAZUC & CHALUMEAU, 1978, p. 18–20, fig. 1 ["La race *infuscata* ... ne peut être tenue pour une forme insulaire, puisqu'elle se retrouve en Guyane ... et en Colombie."]
Megacephala (*Tetracha*) *rutilans* Thomson = *M. sobrina infuscata*, MISKIMEN & BOND 1970, p. 78 ["Very uncommon on St. Croix."]
Megacephala sobrina infuscata, BOYD 1982, p. 4.

PUERTO RICO: *Saliña Papayo*, near La Parguera, hiding under timber on salty mudflat, Sta. (699), 13.IX.1963 (1 ♂ 1 ♀). *Saliña Corozo*, near Cabo Rojo, debris on mudflat near saltlake, 18.IX.1963 (4 ♂♂ 5 ♀♀).

The newly collected material agrees with that described before (cf. Tables 5–7).

Simplified Key to the Megacephalas

BASED ON MATERIAL TREATED IN PRESENT & PREVIOUS PAPERS

1*a* Elytron acuminate at apex (Pl. Vc) . . . . . *M. acutipennis*
1*b* Elytron rounded at apex 2

2*a* Right mandible with 3 apical teeth. Lateral teeth of labrum larger than central ones. Plainly coloured, blue or green predominating, without black spot 3
2*b* Right mandible with 4 apical teeth. Lateral teeth usually not larger than central ones, often weakly developed. In most cases vividly coloured, brilliant green predominating, usually with purple, and with a black spot 4

3*a* Generally blue, often with greenish or brownish shades. Elytron about 4 times as long as wide . . . . . *M. affinis affinis*
3*b* Generally green, often with bluish sides. Elytron about $3\frac{2}{3}$ as long as wide (Pl. Vb) . . . . . *M. affinis gracilis*

4*a* Apical part of elytron without traces of imbricated granules; hind margin smooth. Hind part of head only occasionally with irregular, small wrinkles. Margin of labrum as a rule slightly protruding before curving backwards into the side margin. Apical lunula rounded at base and sharply sinuated on its inner edge, abruptly narrowing towards the suture . . . . . *M. carolina carolina* . . . 5
4*b* Apical part of elytron with imbricated granules; hind margin microscopically serrated. Hind part of head with many, irregular, small wrinkles. Margin of labrum as a rule not protruding before curving backwards into the side margin. Apical lunula usually more or less flattened at base and only weakly sinuated on its inner edge, slightly narrowing towards the suture 6

5*a* Outer part of hind femora rarely blackish. Elytron about $3\frac{3}{5}$ as long as wide . . . . . *M. carolina carolina* f. typica
5*b* Outer part of hind femora, towards the knees, usually distinctly blackish. Elytron about $3\frac{1}{2}$ as long as wide (Pl. Vd–e) . . . . . *M. carolina carolina* f. *occidentalis*

6*a* Reddish dorsal area well separated from the black spot. Elytron about $3\frac{1}{2}$ as long as wide 7

6*b* Reddish dorsal area fused with or superseded by the much larger black spot. Elytron about $3\frac{2}{5}$ as long as wide (Pl. VId) . . . . . *M. sobrina infuscata*

7*a* Dorsal area as a rule yellowish-red, sometimes touching the black spot. Black spot usually extended as far as about $\frac{3}{5}$ sutural length (Pl. VIa–b) . . . . . *M. sobrina sobrina* f. typica

7*b* Dorsal area purplish, sometimes touching the black spot. Black spot usually extended as far as about $\frac{3}{5}$ sutural length . . . . . *M. sobrina sobrina* f. *antiguana*

7*c* Dorsal area purplish, generally touching the black spot. Black spot usually extended as far as $\frac{3}{4}$ sutural length (Pl. Va). . . . . *M sobrina sobrina* f. *bonaireana*

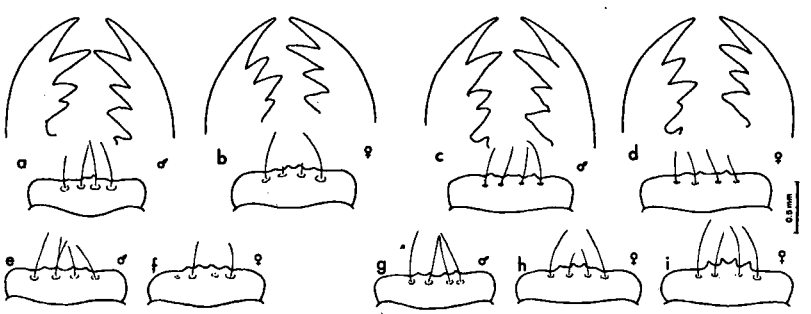

Fig. 42. Labrum and mandibles of *Megacephala sobrina sobrina*: a–b, e–f from Margarita (Pta Mangle); c–d, g–i from Bonaire (Dos Pos). – All specimens with 4, often somewhat reduced setae.

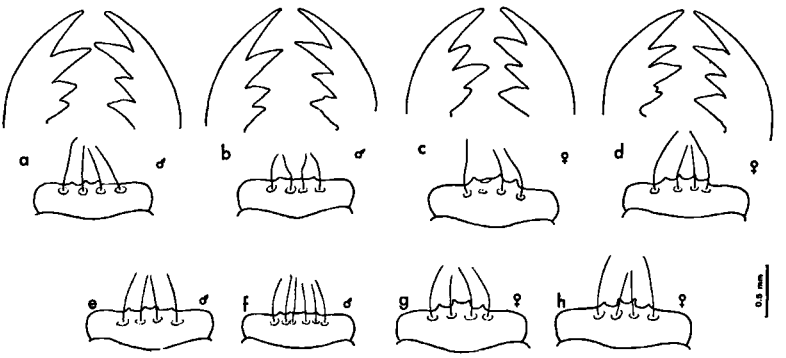

Fig. 43. Labrum and mandibles of *Megacephala sobrina sobrina*: from Aruba (a–g Rooi Bringamosa; h Salinja Master). – As a rule with 4, rarely with 6 setae.

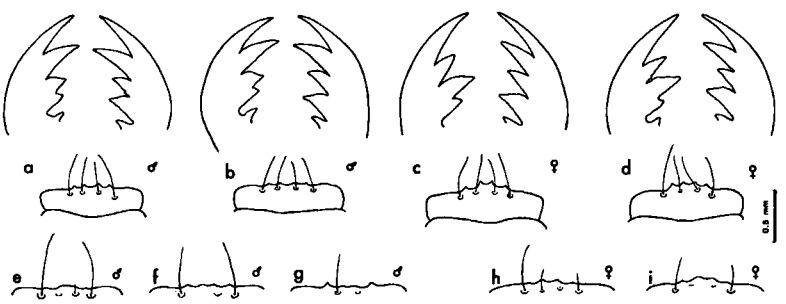

Fig. 44. Labrum and mandibles of *Megacephala sobrina sobrina*: from St. Martin (a–f, h–i Oyster Pond; g Point Blanche flat). – With 4 setae which may be often reduced.

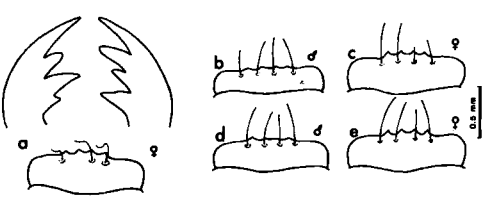

Fig. 45. Labrum and mandibles of *Megacephala sobrina sobrina*: from St. Kitts (a Frigate Bay) and Barbuda (b–e Low Pond). – Mostly with 4 setae.

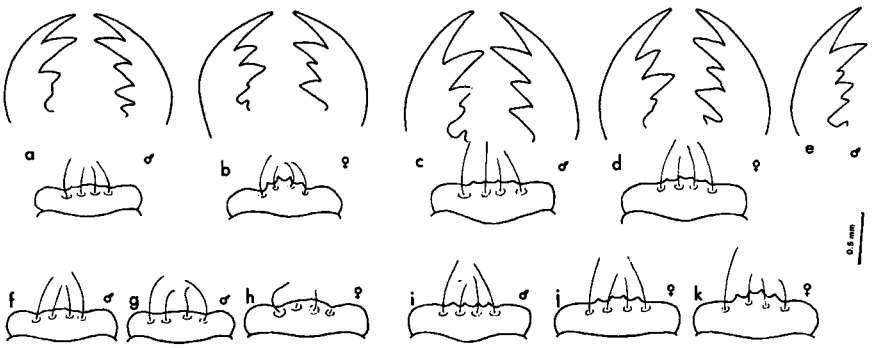

Fig. 46. Labrum and mandibles of *Megacephala carolina carolina* (a–b, f–h) and *M. sobrina infuscata* (c–e, i–k): from Jamaica (a–b, f–g Hope River, h Halfway Tree) and Puerto Rico (c–e, i, k Saliña Corozo, j Sal. Papayo). – Left mandible of e showing a small extra tooth. 4 Setae which may be somewhat reduced.

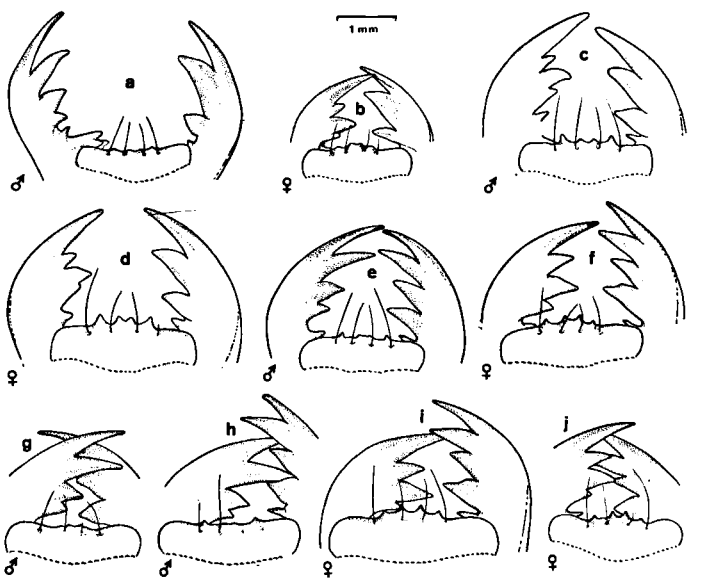

Fig. 47. Labrum and mandibles of *Megacephala acutipennis* (a–b from Hispaniola), *M. affinis affinis* (c–d from Trinidad), *M. sobrina sobrina* (e from St. Martin, f from Curaçao), *M. carolina carolina* (g from S. Carolina, h Georgia, i Texas and j Cuba). [From Studies *6*, 1955].

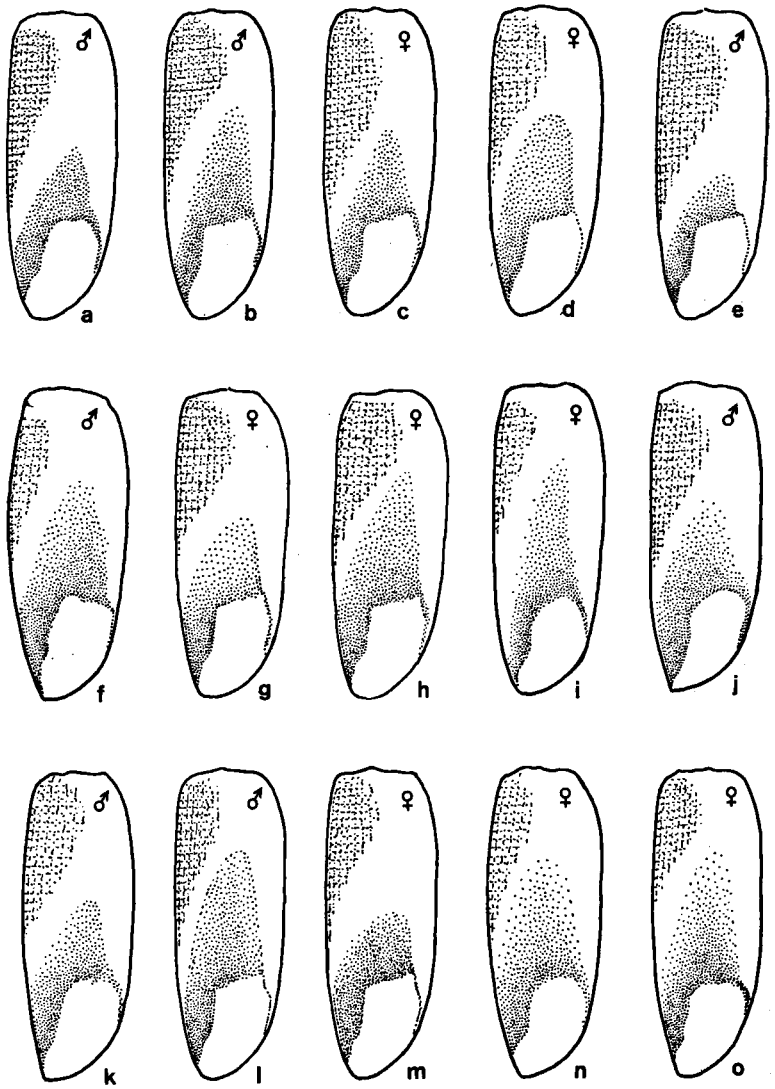

Fig. 48. Variation in dorsal design of right elytron in *Megacephala sobrina sobrina* typical form (a–d) and forma *bonaireana* (e–o): from Margarita (a Pta Piedras, b and d Pta Mosquito, c Pta Mangle), Bonaire (e–h Dos Pos), Klein Bonaire (i), Curaçao (j, Boca Labadera), and Aruba (k–n R. Bringamosa, o Sal. Master).

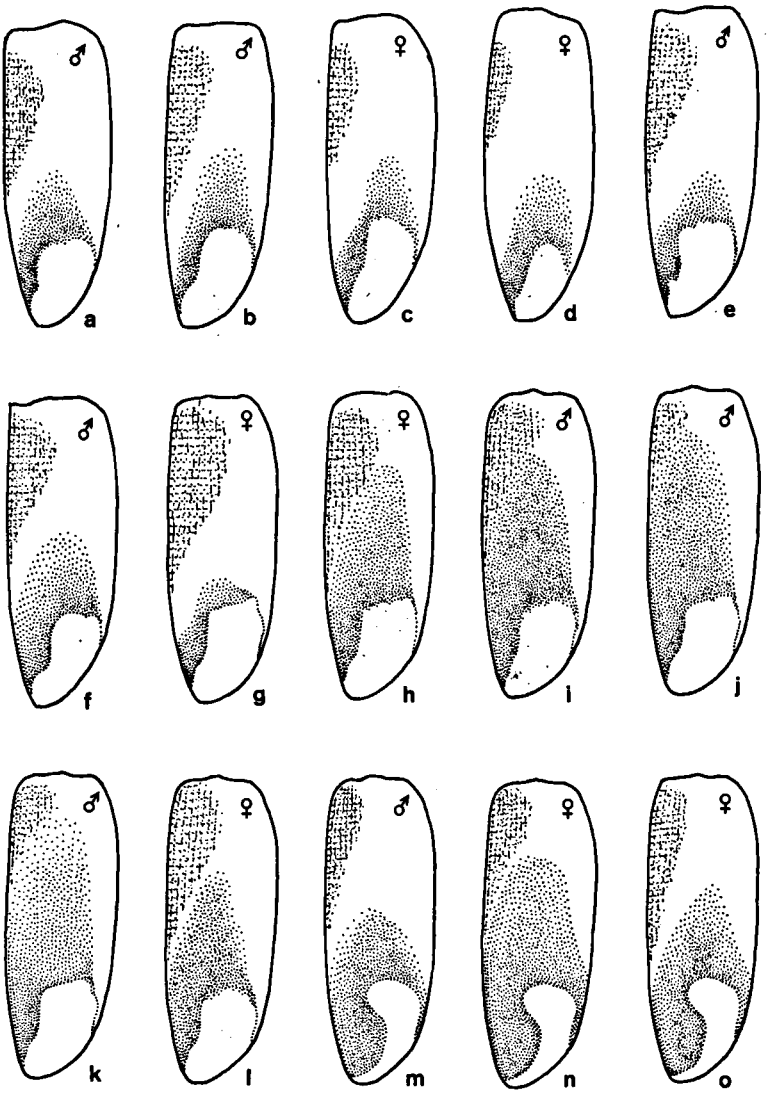

Fig. 49. Variation in dorsal design in *Megacephala sobrina sobrina* forma *antiguana* (a–h), *M. sobrina infuscata* (i–l) and *M. carolina carolina* forma *occidentalis* (m–o): from Barbuda (a–d Low Pond), St. Martin (e–h Oyster Pond), Puerto Rico (i–j Sal. Corozo, k–l Sal. Papayo), and Jamaica (m–o Hope R.).

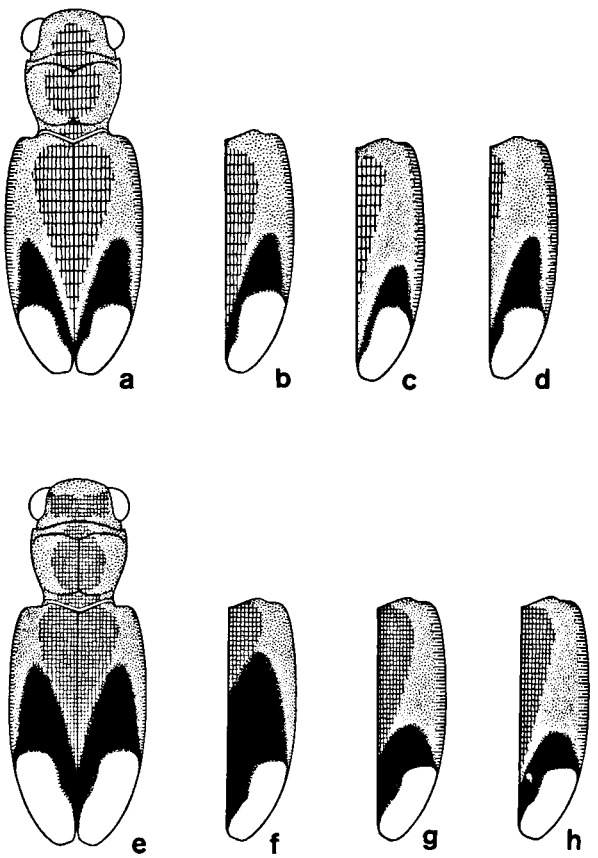

Fig. 50. Colour scheme of *Megacephala sobrina sobrina* f. typica (a–d) and f. *bonaireana* (e–h): from Margarita and Los Testigos (a–d), and Bonaire (e–h). – Dorsal area of elytron a bright yellowish red (in typical form) or purple (in f. *bonaireana*); laterodorsal area a brilliant green; lateral area a brilliant greenish blue. [From *Studies 6*, 1955].

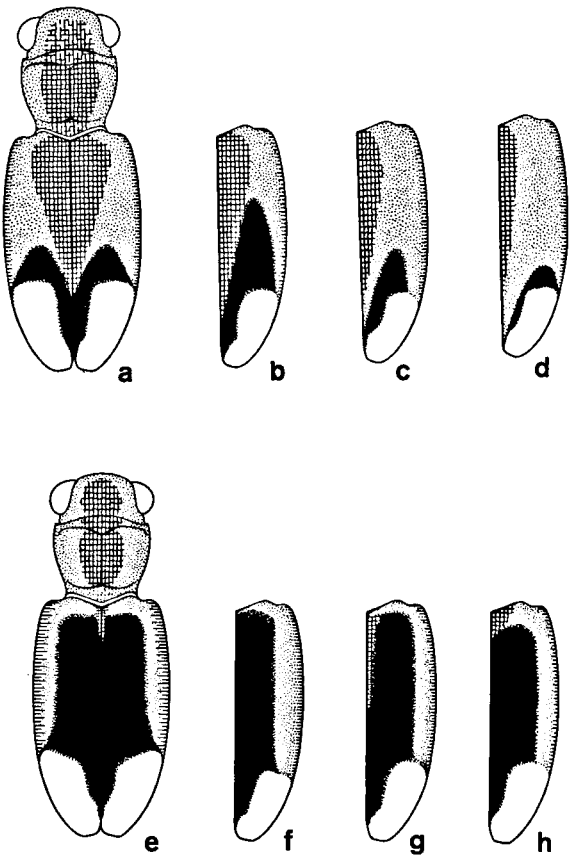

Fig. 51. Colour scheme of *Megacephala sobrina sobrina* f. *antiguana* (a–d) and *M. sobrina infuscata* (e–h): from Antigua, St. Barts and St. Martin (a–d), and St. Croix, Puerto Rico, Hispaniola and Cuba. – Dorsal area of elytron in *antiguana* a bright yellowish purple, laterodorsal area a brilliant green; lateral area a brilliant greenish blue. Dorsal area in *infuscata* fused with, or possibly superseded by black area, the remnant a bright purple; laterodorsal area narrow, a brilliant green which may become dominated by the blue of the lateral area. [From *Studies 6*, 1955].

TABLE 5

MEASUREMENTS IN *Megacephala*, in mm

by F. VAN DER HEIDE, in which a few data obtained by the present author (x) are included.

		Elytron length	width	Pronotum l.	w.	Head l.	w.	Body l.	w.	El. l./w.	Pron. w./l.	Head w./l.	Body l./w.
							M. sobrina sobrina						
	Aruba												
♂	6	8.3–*8.9*– 9.3	*2.55*	*3.25*	*3.55*	*2.65*	*3.9*	*15.0*	*5.05*	*3.5*	*1.1*	*1.45*	*2.95*
♀	9	8.3–*9.3*–10.3	*2.75*	*3.35*	*3.8*	*2.85*	*4.1*	*15.5*	*5.45*	*3.4*	*1.15*	*1.45*	*2.8*
	Aruba (R. Bringamosa)+												
♂	2	— — —	—	—	—	—	—	*15.2*	—	*3.55*	*1.1*	*1.55*	*3.05*
♀	8	— — —	—	—	—	—	—	*15.7*	—	*3.5*	*1.1*	*1.55*	*3.1*
	Bonaire												
♂	19	8.6–*9.3*–9.9	*2.7*	*3.5*	*3.85*	*2.85*	*4.15*	*15.6*	*5.4*	*3.4*	*1.1*	*1.45*	*2.85*
♀	12	8.9–*9.5*–9.9	*2.8*	*3.5*	*3.95*	*2.9*	*4.25*	*16.0*	*5.65*	*3.4*	*1.15*	*1.45*	*2.8*
	Bonaire (Dos Pos)+												
♂	12	9.0–*9.4*– 9.9	*2.65*	*3.65*	*3.95*	*2.9*	*4.1*	*16.0*	*5.3*	*3.55*	*1.1*	*1.4*	*3.0*
♀	3	9.6–*9.9*–10.0	*2.85*	*3.7*	*4.0*	*3.0*	*4.2*	*16.6*	*5.7*	*3.5*	*1.1*	*1.4*	*2.9*
	Margarita												
♂	13	8.2–*8.9*–9.9	*2.5*	*3.2*	*3.55*	*2.7*	*3.9*	*14.8*	*5.0*	*3.55*	*1.1*	*1.45*	*2.95*
♀	4	9.0–*9.1*–9.4	*2.65*	*3.25*	*3.75*	*2.85*	*4.1*	*15.2*	*5.3*	*3.4*	*1.15*	*1.45*	*2.85*
	Margarita (Pta Piedras)+												
♂	10	8.3–*9.1*– 9.6	*2.55*	*3.4*	*4.0*	*2.8*	*4.2*	*15.3*	*5.1*	*3.55*	*1.15*	*1.55*	*3.0*
♀	7	9.2–*9.8*–10.0	*2.8*	*3.7*	*4.1*	*2.9*	*4.4*	*16.5*	*5.6*	*3.2*	*1.1*	*1.5*	*2.95*
	Barbuda (Low Pond)+												
♂	16	8.3–*9.4*–10.5	*2.65*	*3.6*	*3.95*	*3.1*	*4.15*	*16.7*	*5.3*	*3.55*	*1.15*	*1.4*	*3.0*
♀	15	8.2–*9.5*–10.0	*2.75*	*3.6*	*3.9*	*3.15*	*4.15*	*16.2*	*5.5*	*3.45*	*1.1*	*1.4*	*3.0*
	St. Martin												
♂	13	7.3–*8.2*–8.9	*2.35*	*3.1*	*3.5*	*2.6*	*3.8*	*13.9*	*4.75*	*3.45*	*1.1*	*1.45*	*2.9*
♀	17	8.0–*8.7*–9.6	*2.6*	*3.2*	*3.75*	*2.8*	*3.95*	*14.7*	*5.15*	*3.35*	*1.15*	*1.45*	*2.8*
	St. Martin (Oyster Pond)+												
♂	7	7.5–*8.5*–9.0	*2.4*	*3.35*	*3.7*	*2.85*	*3.85*	*14.5*	*4.8*	*3.55*	*1.15*	*1.35*	*3.0*
♀	7	8.6–*9.2*–9.5	*2.6*	*3.5*	*3.9*	*2.95*	*4.1*	*15.3*	*5.2*	*3.55*	*1.1*	*1.35*	*3.0*
							M. sobrina infuscata						
	Puerto Rico												
♂	5	8.1–*8.8*–9.1	*2.5*	*3.2*	*3.55*	*2.65*	*3.85*	*14.65*	*5.0*	*3.5*	*1.1*	*1.45*	*2.9*
♀	6	8.4–*9.0*–9.3	*2.65*	*3.25*	*3.70*	*2.75*	*4.05*	*15.0*	*5.3*	*3.4*	*1.15*	*1.5*	*2.8*
	Puerto Rico (Sal. Corozo)												
♂	4	8.2–*9.4*–9.8	*2.2*	—	—	—	—	*15.2*	*4.4*	*3.45*	*1.15*	*1.4*	*2.9*
♀	5	9.4–*9.6*–9.8	*2.25*	—	—	—	—	*15.6*	*4.5*	*3.4*	*1.15*	*1.4*	*2.8*
							M. carolina carolina						
	Jamaica (dry spec.)												
♂	7	7.4–*7.9*–8.6	*2.7*	*2.65*	*3.1*	*2.4*	*3.55*	*12.9*	*4.5*	*2.9*	*1.15*	*1.5*	*2.9*
♀	9	8.0–*8.3*–8.7	*3.0*	*2.75*	*3.3*	*2.5*	*3.7*	*13.55*	*4.85*	*2.75*	*1.2*	*1.5*	*2.8*

TABLE 6

AVERAGED MEASUREMENTS IN MEGACEPHALA LEGS, in mm.

		length of Elytron	*body*	III fem.	III tib.	III tar.	III *leg*	II fem.	II tib.	II tar.	II *leg*	I fem.	I tib.	I tar.	I *leg*
								M. sobrina sobrina							
Aruba															
♀	4	9.6	*16.4*	5.8	5.5	6.25	*17.3*	4.75	4.3	4.55	*13.6*	4.0	3.0	3.45	*10.5*
Curaçao															
♂	1	9.0	*15.3*	5.7	5.6	6.2	*17.3*	4.8	4.2	4.6	*13.6*	3.9	3.0	3.7	*10.6*
Bonaire															
♂	5	9.6	*16.1*	6.05	6.5	6.9	*19.4*	5.0	4.7	4.95	*14.6*	4.2	3.2	3.8	*11.2*
♀	5	9.9	*16.5*	6.05	5.75	6.3	*18.1*	4.9	4.55	4.6	*14.1*	4.05	3.05	3.15	*10.2*
Margarita															
♂	5	9.25	*15.7*	5.85	5.7	6.4	*17.9*	4.9	4.45	4.7	*14.0*	4.1	3.15	3.75	*11.0*
♀	5	9.8	*16.5*	6.2	5.85	6.25	*18.3*	5.0	4.3	4.45	*13.7*	4.0	3.05	3.5	*10.5*
Barbuda															
♂	8	9.2	*15.6*	5.65	5.55	6.45	*17.7*	4.65	4.2	4.6	*13.4*	3.9	2.9	3.5	*10.3*
♀	8	9.25	*15.6*	5.35	5.15	5.8	*16.5*	4.45	3.95	4.2	*12.5*	3.8	2.8	3.2	*9.8*
St. Martin															
♂	5	8.45	*14.5*	5.35	5.2	6.15	*16.7*	4.3	4.0	4.3	*12.6*	3.85	2.95	3.45	*10.3*
♀	5	8.95	*15.2*	5.7	5.3	6.1	*17.1*	4.55	4.1	4.25	*12.9*	3.85	2.9	3.25	*10.0*
								M. sobrina infuscata							
Puerto Rico															
♂	2	8.65	*14.6*	5.4	5.15	6.0	*16.5*	4.45	3.9	4.4	*12.8*	3.75	2.95	3.35	*10.1*
♀	2	9.3	*15.8*	5.85	5.4	6.0	*17.2*	4.55	4.05	4.2	*12.7*	3.9	2.9	3.1	*9.9*
								M. sobrina							
Suriname (dry spec.)															
♂	3	9.1	*15.2*	6.0	5.7	6.35	*18.0*	4.95	4.55	4.6	*14.1*	4.15	3.2	3.9	*11.2*
♀	3	9.2	*15.3*	6.3	5.7	6.15	*17.9*	4.6	4.2	4.35	*13.2*	4.0	3.0	3.2	*10.3*
								M. carolina carolina							
Cuba (dry spec.)															
♂	2	9.4	*15.5*	6.0	5.95	6.0	*17.8*	4.7	4.45	4.45	*13.6*	4.0	3.15	3.25	*10.4*
♀	4	9.6	*16.0*	5.8	5.3	5.8	*16.8*	4.7	4.2	4.3	*13.2*	3.85	2.9	3.2	*10.0*
Florida (dry spec.)															
♂	2	9.7	*16.0*	5.85	5.65	6.4	*17.9*	4.8	4.45	4.6	*13.9*	4.05	3.05	3.5	*10.6*
Carolina (dry spec.)															
♀	3	10.0	*17.0*	6.15	5.75	5.9	*17.7*	4.75	4.45	4.45	*13.7*	4.0	3.1	3.4	*10.6*
Oaxaca (dry spec.)															
♂	3	9.7	*16.0*	6.0	5.9	6.2	*18.1*	4.9	4.6	4.8	*14.4*	4.1	3.2	4.0	*11.3*
								M. acutipennis							
Hispaniola (dry spec.)															
♂	3	7.3	*13.0*	4.35	4.15	4.5	*13.0*	3.85	3.45	3.7	*11.0*	3.25	2.55	3.05	*8.9*
♀	3	8.1	*14.0*	4.85	4.25	4.35	*13.5*	3.9	3.5	3.25	*10.6*	3.25	2.55	2.55	*8.4*
								M. affinis affinis							
Colombia & Venezuela (dry spec.)															
♂	2	9.6	*16.0*	5.3	5.3	5.8	*15.6*	4.4	4.3	4.6	*13.3*	3.8	3.0	4.0	*10.8*
♀	3	10.3	*17.0*	5.9	5.7	6.1	*17.8*	4.6	4.4	4.3	*13.2*	4.0	2.9	3.35	*10.5*

TABLE 7

AVERAGED MEASUREMENTS IN MEGACEPHALA LEGS
expressed in percentages of the elytron length

		Elytron – length in mm	III				II				I			
			fem.	tib.	tar.	*leg*	fem.	tib.	tar.	*leg*	fem.	tib.	tar.	*leg*
							M. sobrina sobrina							
	Aruba													
♀	4	*9.6*	60.3	57.4	65.0	*180*	49.4	44.7	47.3	*142*	42.6	31.2	35.9	*109*
	Curaçao													
♂	1	*9.0*	63.0	62.0	69.0	*192*	53.0	47.0	51.0	*151*	43.0	33.0	41.0	*118*
	Bonaire													
♂	5	*9.6*	58.1	62.0	72.2	*203*	52.4	48.9	51.6	*153*	44.1	33.3	39.9	*117*
♀	5	*9.9*	61.1	58.1	63.6	*183*	49.4	46.1	46.2	*142*	40.9	30.8	31.8	*103*
	Margarita													
♂	5	*9.25*	63.1	61.3	68.9	*193*	52.9	48.2	50.1	*152*	44.3	34.0	40.3	*118*
♀	5	*9.8*	63.3	59.5	63.5	*186*	50.9	44.0	45.4	*140*	40.7	31.2	35.6	*107*
	Barbuda													
♂	8	*9.2*	61.7	60.5	70.0	*192*	50.1	45.7	49.8	*146*	42.2	31.6	38.2	*112*
♀	8	*9.25*	58.1	55.7	62.6	*179*	48.1	42.7	45.4	*136*	40.8	30.5	34.6	*106*
	St. Martin													
♂	5	*8.45*	63.3	61.8	72.9	*198*	51.2	47.2	51.2	*150*	45.5	34.8	41.0	*121*
♀	5	*8.95*	63.8	59.5	68.0	*191*	51.0	45.9	47.9	*145*	43.0	32.4	36.2	*111*
							M. sobrina infuscata							
	Puerto Rico													
♂	2	*8.65*	62.5	59.8	69.2	*192*	51.5	45.0	50.5	*148*	43.5	33.9	38.8	*116*
♀	2	*9.3*	62.1	58.3	64.9	*187*	49.5	43.7	45.0	*138*	42.5	31.4	33.8	*107*
							M. sobrina							
	Suriname (dry spec.)													
♂	3	*9.1*	66.2	63.0	70.0	*199*	54.4	50.0	50.8	*156*	45.7	35.3	43.0	*123*
♀	3	*9.2*	68.7	62.2	67.0	*195*	50.3	45.9	47.2	*145*	44.5	32.7	34.9	*112*
							M. carolina carolina							
	Cuba (dry spec.)													
♂	2	*9.4*	63.7	63.2	63.7	*189*	49.9	47.5	47.5	*145*	42.5	33.5	34.6	*111*
♀	4	*9.6*	59.8	54.9	59.9	*175*	48.8	43.3	44.4	*136*	40.0	30.1	33.1	*103*
	Florida (dry spec.)													
♂	2	*9.7*	60.3	58.2	66.0	*185*	49.4	45.8	47.3	*143*	41.8	31.3	36.1	*109*
	Carolina (dry spec.)													
♀	3	*10.0*	61.8	57.5	59.2	*177*	47.8	44.8	44.8	*137*	40.1	31.1	34.1	*106*
	Oaxaca (dry spec.)													
♂	3	*9.7*	62.0	61.0	64.2	*187*	50.7	47.6	49.7	*149*	42.4	33.1	41.4	*117*
							M. acutipennis							
	Hispaniola (dry spec.)													
♂	3	*7.3*	59.5	57.3	61.8	*179*	53.2	47.3	50.8	*151*	44.5	35.3	42.2	*122*
♀	3	*8.1*	59.9	52.5	53.9	*166*	48.6	44.4	40.4	*131*	40.3	31.7	31.3	*103*
							M. affinis affinis							
	Colombia & Venezuela													
♂	2	*9.6*	56.0	52.1	61.3	*173*	46.1	45.0	48.2	*139*	39.8	31.4	41.9	*113*
♀	3	*10.3*	57.2	55.1	59.7	*173*	44.8	41.9	42.2	*128*	38.9	28.2	33.0	*102*

DISTRIBUTION

When studying the geographical distribution of Cicindelids in the West Indies, LENG & MUTCHLER (1916) produced a table which "indicates a dispersal of the genus *Cicindela* from the United states to Cuba, Porto Rico and Hispaniola, with a decreasing number of species as we proceed southward; accompanied, however, by a dispersal of one species (*suturalis*) in the opposite direction, from South America northward. The southward dispersal apparently ceases at Guadeloupe, the northward reaches Porto Rico; but additional data may alter these statements." In this table – see below – attention is paid to the West Indian – Floridian relationship and to the isolated occurrence of *C. argentata* in Guadeloupe, a species which in many varieties abounds in South America.

Florida	*trifasciata*	*marginata*	& 17 more species		
Bahamas	*trifasciata*	*marginata*			
Cuba	*trifasciata*	*marginata*	*boops* & 4 more species		
Grand Cayman	*trifasciata*				
Jamaica	*trifasciata*				
Hispaniola	*trifasciata*		*boops*	*suturalis*	
Porto Rico	*trifasciata*		*boops*	*suturalis*	
St. Thomas	*trifasciata*			*suturalis*	
St. Barts				*suturalis*	
Barbuda	*trifasciata*			*suturalis*	
Antigua	*trifasciata*			*suturalis*	
Guadeloupe	*trifasciata*			*suturalis*	*argentata*
Martinique				*suturalis*	
St. Vincent				*suturalis*	
Barbados				*suturalis*	
Grenada				*suturalis*	

Comparing Table 8 we may establish that the general picture has not changed considerably after sixty years.

Our knowledge of the Virgin Islands fauna has increased, and Jamaica has got two more species, including a not uncommon one (*C. carthagena jamaicana*) only recently described and possibly also to be expected in other parts of the Greater Antilles. We may now consider *C. boops* as a characteristic species of the Greater Antilles, also occurring on the Virgin Islands and the Caicos & Turks Islands north of Hispaniola.

Cicindela trifasciata and *C. suturalis* remained the commonest two species, though the first one shows a distributional gap south of Guade-

loupe and the second one has not (yet?) been reported from Jamaica, Cuba and the Bahamas. *C. trifasciata* generally occurs on mud flats, along the margin of salt ponds, and near shallow mangrove lagoons (its occurrence along the border of an artificial freshwater lake at Mona, Jamaica, was quite a surprise); *C. suturalis*, on the contrary, prefers sandy beaches. In all four cases in which *C. suturalis suturalis* and *C. trifasciata trifasciata* were collected in the same locality, this habitat-preference could be observed, while in a few cases when single individuals were found in a "wrong" habitat, this clearly was by accident.

Though subspecific categories in *C. suturalis* are justified by differences in elytral design, there remain cases of doubt, making interpretation of data as given in literature often uncertain. In the present material, the specimens of *hebraea* from Puerto Rico may be looked at with some suspicion. Further study of the *C. suturalis*-complex will possibly yield several new and interesting taxonomic data with regard to its Antillean representatives.

Generally speaking, the impression was obtained that typical *suturalis* (with a strongly dominant yellowish-white design) prefers white-sandy beaches, while the subspecies *hebraea* (with a yellowish-white tortuous middle band and hooked lunula) occurs on sandy beaches which are coloured by mud, or slightly polluted. In the subspecies *guadeloupensis* the same dark elytral design is still more developed, resembling that of *C. trifasciata trifasciata.*

LENG & MUTCHLER (1916, p. 694) already observed that "*hebraea* and *suturalis* have never been found together. *C. trifasciata* has, however, been found running on the same beach ... a little further back from the sea." On Tobago, *trifasciata trifasciata* and *suturalis hebraea* have been collected in the same locality, on dark sand.

The identification of a Jamaican cicindelid, not uncommon in coastal and riverine habitats, as a subspecies of a well-known continental species, *C. carthagena*, was rather a surprise. *C. carthagena jamaicana* was found on a sandbar at the entrance of Great Saltpond, near mangroves, among several *C. trifasciata trifasciata.* This locality is situated quite near the salina of Port Henderson in which R. P. BENGRY found *C. boops*, a species which preferably occurs in saline muddy areas. LENG & MUTCHLER (1916, p. 691) give a picture of an "Alkali flat at Santa Rita, Porto Rico", which

shows a low muddy section in which *C. boops* occurred, while *C. trifasciata* was found alongside a small brook.

In the most northern part of the Caribbean, *C. marginata* inhabits sandy beaches as well as marshy coastal areas.

Following those authors who consider the West Indies ceasing to exist beyond the island of Grenada, LENG & MUTCHLER ignore Trinidad & Tobago, and all islands of the Leeward Group, including those (west of Margarita) the fauna of which has a remarkable, endemic character. With regard to the cicindelids, however, the species obtained do not differ from those occurring on the adjacent mainland.

From Trinidad & Tobago *C. trifasciata trifasciata* and *C. suturalis hebraea* are recorded from haline coastal areas, and *C. argentata* from non-haline inland localities.

On the islands of the Leeward Group (west of Trinidad) *C. trifasciata* appears to be replaced by *C. auraria*, and *C. suturalis* by *C. graphiptera*. However, in Margarita *C. auraria* occurs together with *C. trifasciata trifasciata*. *Cicindela graphiptera fulgidiceps* has not been recorded from Curaçao, Aruba and Bonaire, though it is known from the shores of the opposite mainland, where it has been found together with *C. auraria* (cf. JONGE POERINK 1953, p. 139, fig. 27).

Recent finds of *C. suturalis hebraea* and *C. argentata* on Curaçao (not recorded before), once more illustrate our still scanty knowledge of the beetle fauna of this small and densely populated island.

The pattern of distribution in *Megacephala* – as expressed in Table 8 – is taking shape only if we are subdividing the species *Megacephala sobrina* into a few lower taxonomical categories, difficult to distinguish and almost unrecognizable among the profusion of comparable mainland races without knowing an exact find-spot. In this way we may distinguish a subspecies *infuscata* inhabiting the Greater Antilles and Virgin Islands; a forma *antiguana* occurring on the northern islands of the Windward Group as far south as Antigua; a forma *bonaireana* on the Netherlands Antillean islands of the Leeward Group, and a typical form from the Venezuelan islands of Margarita and Los Testigos.

The occurrence of *Megacephala carolina* and *M. acutipennis* on the Greater Antilles clearly points to a Floridian relationship, while *M. affinis*

represents a continental fauna element which may prove to be more diversified after a more thorough research of the non-coastal island areas.

Hiding places of the nocturnal *Megacephala sobrina* were found in various habitats, near fresh or brackish-water wells, in gardens, pastures with cow faeces, and on muddy areas near lagoons and saltlakes.

TABLE 8

GEOGRAPHICAL DISTRIBUTION OF THE CICINDELIDS treated in this paper

	Cicindela	*dorsalis media*	*marginata*	*carthagena jamaicana*	*boops*	*trifasciata ascendens*	*trifasciata trifasciata*	*suturalis suturalis*	*suturalis hebraea*	*suturalis guadeloupensis*	*argentata*	*auraria*	*graphiptera fulgidiceps*	*Megacephala*	*carolina carolina* f. *occidentalis*	*acutipennis*	*sobrina infuscata*	*sobrina sobrina* f. *antiguana*	*sobrina sobrina* f. typica	*sobrina sobrina* f. *bonairena*	*affinis affinis*	*affinis gracilis*
Southeast USA	O	O				×								?								
Bahamas		—			×		×															
Cuba		—			×	×	×							×	×		×					
Cayman Islands							×							×			?					
Jamaica				O	×		O							×								
Hispaniola					×	×	×	×	×							×	×	?			?	
Puerto Rico					O	—	O	—	O							—	O					
St. Thomas							×	O									—					
St. John							—	—									×					
Tortola							—															
Anegada					—		×	×									—	×				
St. Croix							×										×					
Anguilla							O															
St. Martin							O	×									?	O				
St. Barts							×	×									?	×				
St. Kitts							O											O				
Barbuda							O	O										O				
Antigua							O	O	—									×				
Guadeloupe							—	—	×	×	—											
La Désirade							—															
Martinique								—	—													
St. Vincent								—	×													
Barbados								—	×													
Grenada								—														
Tobago							O		O													
Trinidad									O		×										×	
Patos																			×			
Los Testigos																			O			
Margarita							O					O	O						O			
Cubagua																			O			
Tortuga													O									
Bonaire												O								O		
Klein Bonaire												O								O		
Curaçao									×		×	O								O		×
Aruba												O								O		
S. Amer. mainland							×		×	×	×	O	O						?	?	×	×

O according to material collected by the author
× according to specimens studied from other sources
—from literature.
? doubtful record.

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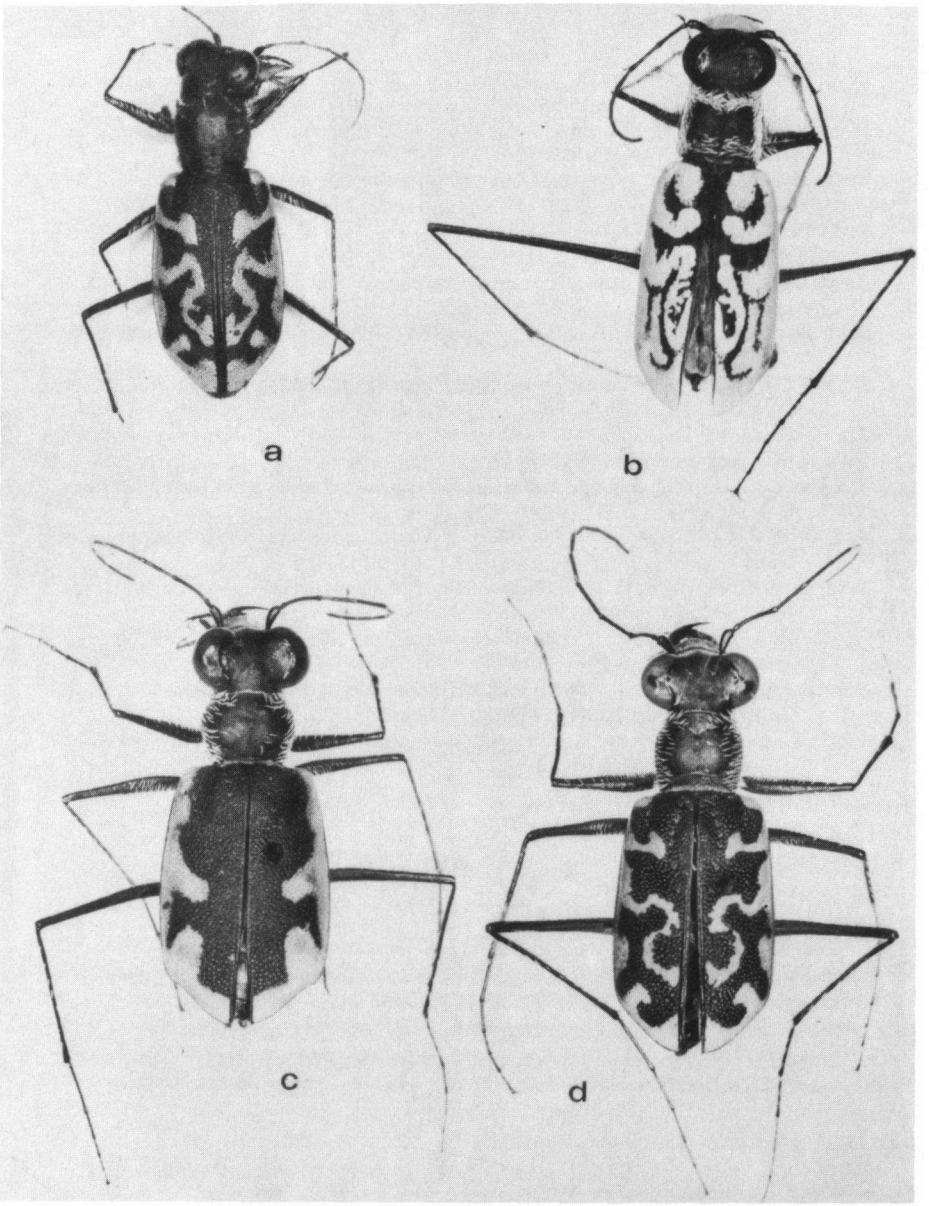

PLATE I

a *Cicindela suturalis hebraea* from Brasil, ♀. – b *C. graphiptera fulgidiceps* from La Goajira, Colombia, ♂. – c *C. auraria* from Aruba, ♀. – d *C. trifasciata trifasciata* from St. Martin, ♂.

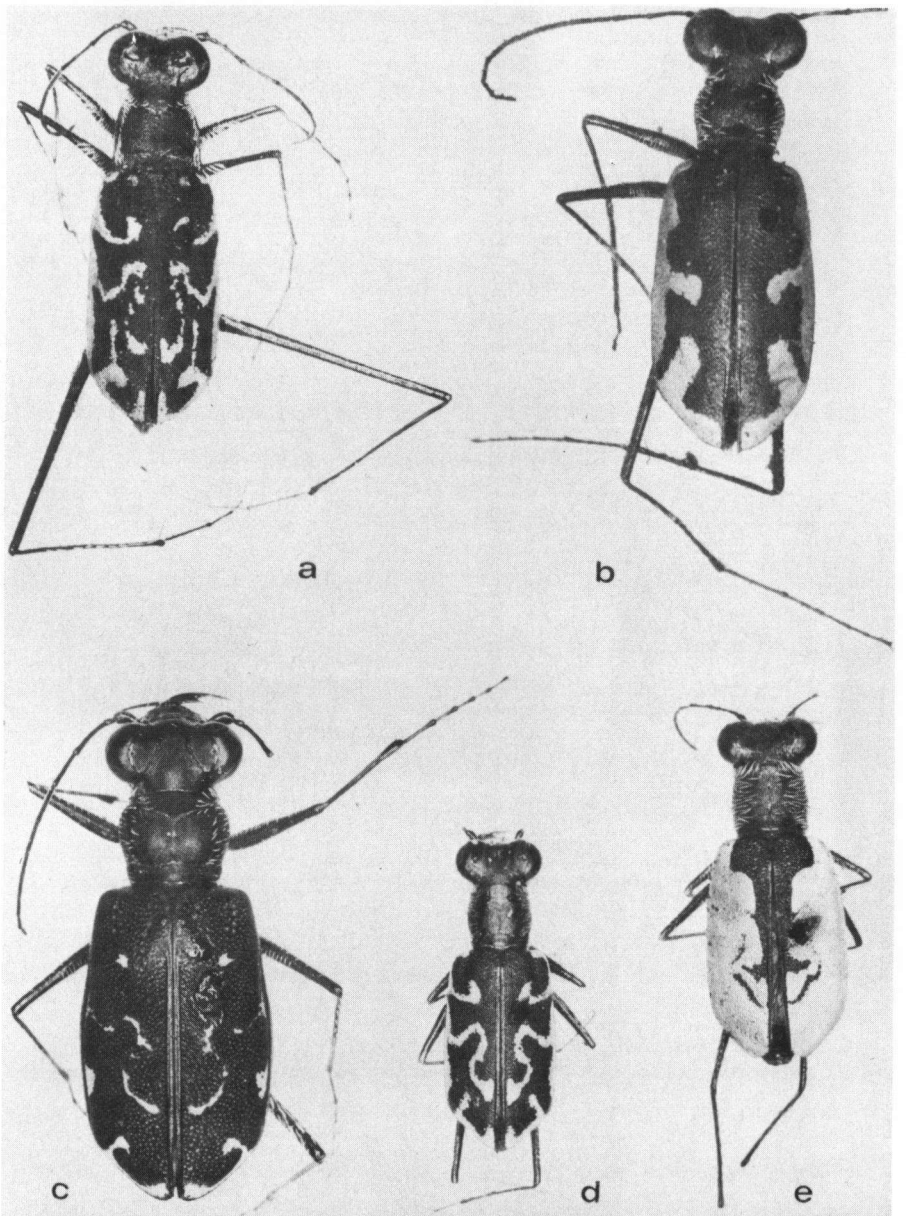

PLATE II

a *Cicindela graphiptera graphiptera* from Costa Rica, ♂. – **b** *C. boops.* – **c** *C. trifasciata ascendens* from U.S.A., ♀. – **d** *C. suturalis guadeloupensis*, ♂. – **e** *C. suturalis suturalis*, ♀.

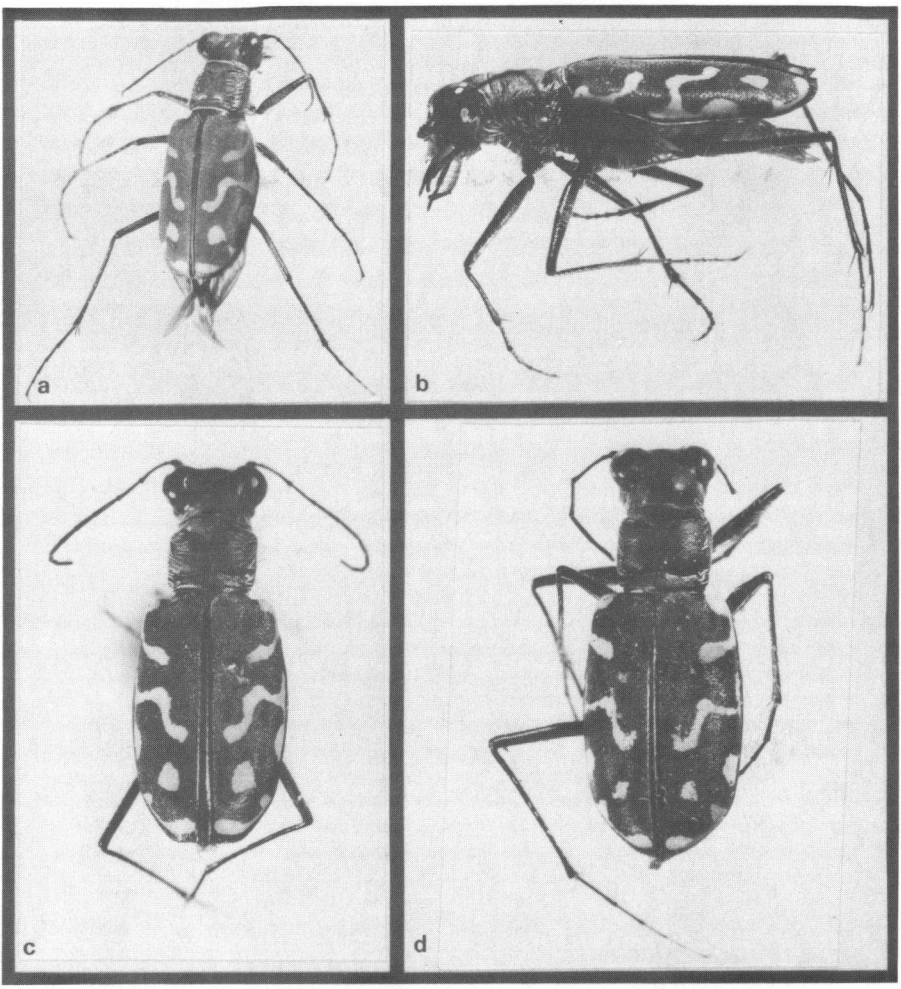

PLATE III

a *Cicindela carthagena jamaicana* from Jamaica, Saltpond, ♀ [7.2 mm el.l.]. – b *C. carthagena jamaicana* from Jamaica, paratype ♀, Mus. Amsterdam [6.9 mm el.l.]. – c Same paratype. – d *C. carthagena* from México, Playa Camarón, ♂, Mus. Amsterdam [7.4 mm el.l.].

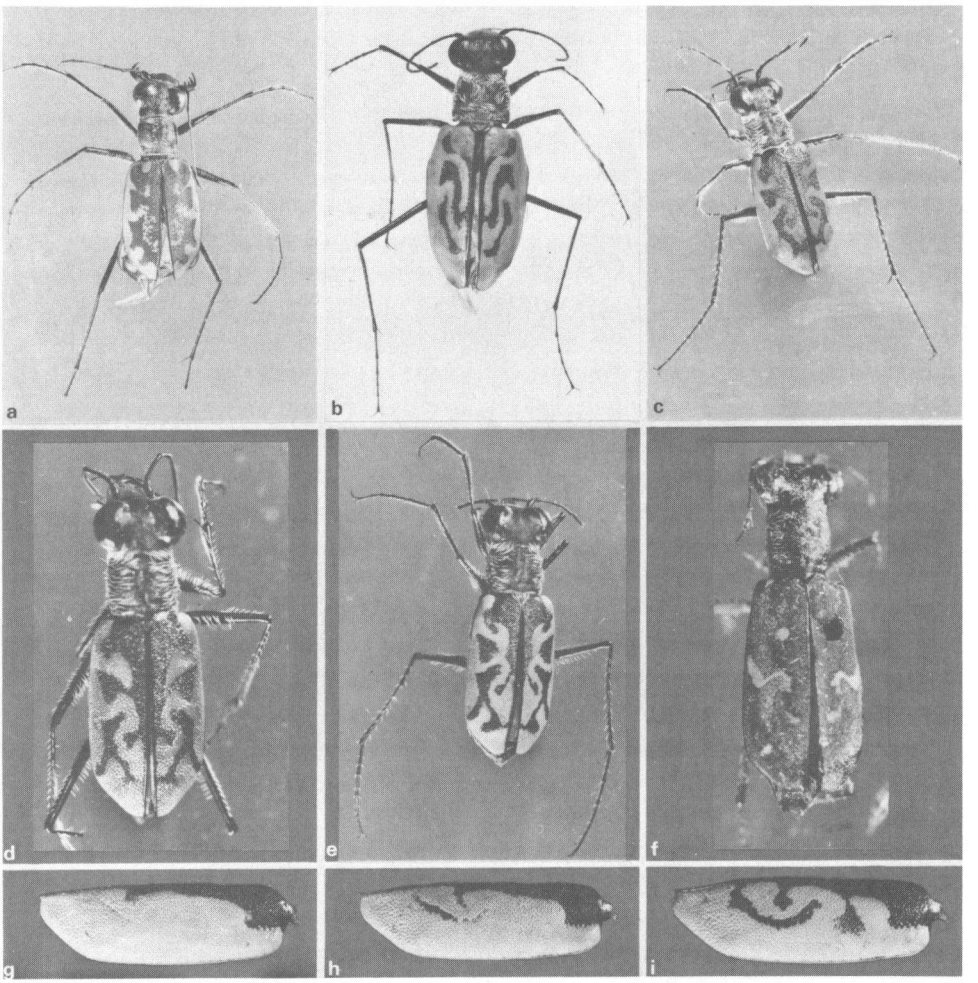

PLATE IV

a *Cicindela marginata* from Key Biscayne. Fla., ♂ [7.0 mm el.l.]. – b *C. dorsalis media* from South Carolina, Beaufort, ♀ [7.7 mm el.l.]. – c *C. suturalis hebraea* from Puerto Rico, Playa Medianía Alta, ♂. – d *C. suturalis hebraea* from Trinidad, Los Gallos Point, ♂. – e *C. sut. hebraea* from same locality, ♂. – f *C. argentata* from Curaçao, Rio Canario, ♀, Mus. Amsterdam [4.9 mm el.l.]. – g–i *C. suturalis suturalis* from Antigua, Deep Bay, showing variation of elytral design in one sample [5.2, 5.1 and 5.5 mm in length].

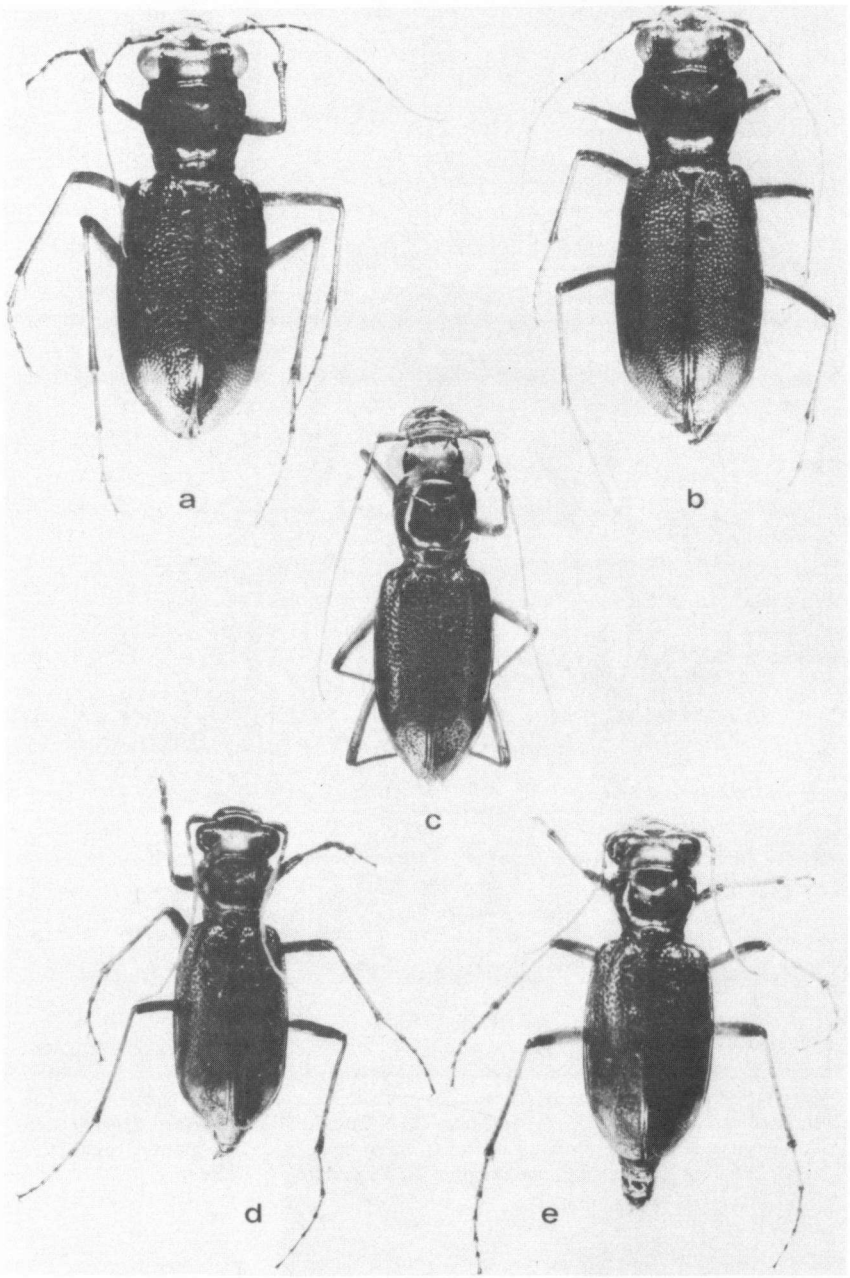

PLATE V

a *Megacephala sobrina sobrina* f. *bonaireana* from Curaçao, ♀. – b *M. affinis affinis* from Curaçao, ♀. – c *M. acutipennis* from Hispaniola, Haiti, ♂. – d–e *M. carolina carolina* f. *occidentalis* from Cuba, ♂ & ♀.

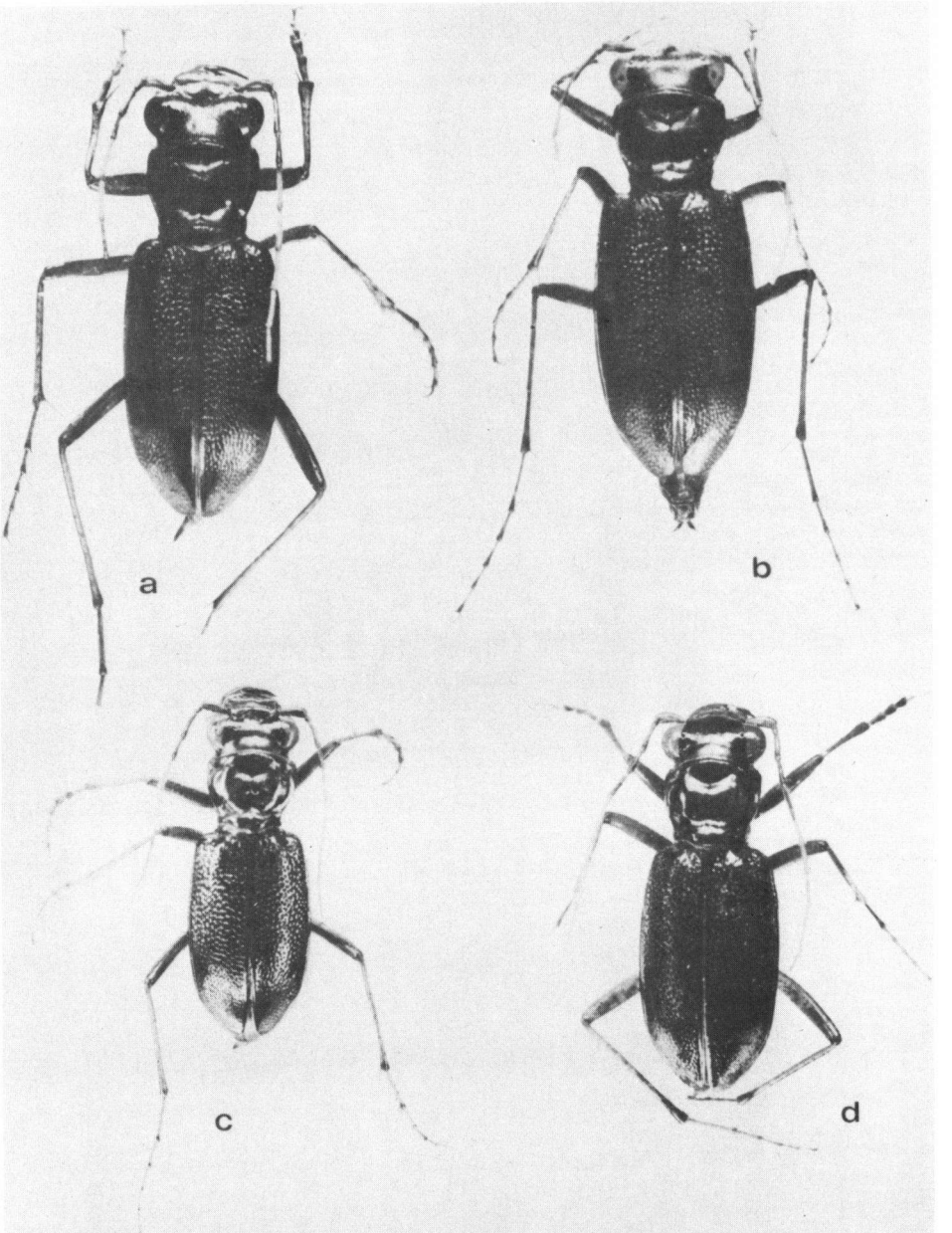

PLATE VI

a–b *Megacephala sobrina sobrina*, typical form, from Margarita, ♂ & ♀. c *M. sobrina sobrina* f. *antiguana* from St. Martin, ♂. – d *M. sobrina infuscata* from Puerto Rico, ♂.